A Stereo-Atlas of Ostracod Shells

edited by R. H. Bate, J. W. Neale, David J. Siveter and
P. C. Sylvester-Bradley

Volume 3, 1976

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Acknowledgements

This Volume of the *Stereo-Atlas* has been aided by generous financial support from Robertson Research International Ltd. and from the Shell International Petroleum Co. Ltd.

Stereo-viewing for users of the Atlas

In order to obtain maximum information and benefit from the use of the *Stereo-Atlas* it is essential that the user view the micrographs stereoscopically. Small pocket-sized stereo-viewers are most suitable for this purpose. Two suppliers are:

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595.336.11 (113.42) (944:163.148.35): 551.35 + 552.54

ON *RENIBEYRICHIA MULCIBER* SIVETER gen. et sp. nov.

by David J. Siveter
(*University of Leicester, England*)

Genus *RENIBEYRICHIA* gen. nov.

Type-species: *Renibeyrichia mulciber* sp. nov.

Derivation of name: Latin *renis*, a kidney, and the generic name *Beyrichia*; with reference to the shape of the crumina. Gender, feminine.

Diagnosis: Coarsely tuberculate beyrichiine with a long crumina, indistinctly set off from the lobes, incorporating all of the anterior lobe up to the cuspidal region, the area of lobal connection and the ventral region of the syllobium. Syllobial groove sharply defined, joined directly to the prenodal sulcus below a prominent, undisturbed zygal arch in both dimorphs. Velar ridge well developed, smooth, entire in tecnomorphs; it can be traced, parallel to the marginal structure, along the base the crumina.

Explanation of Plate 3, 2

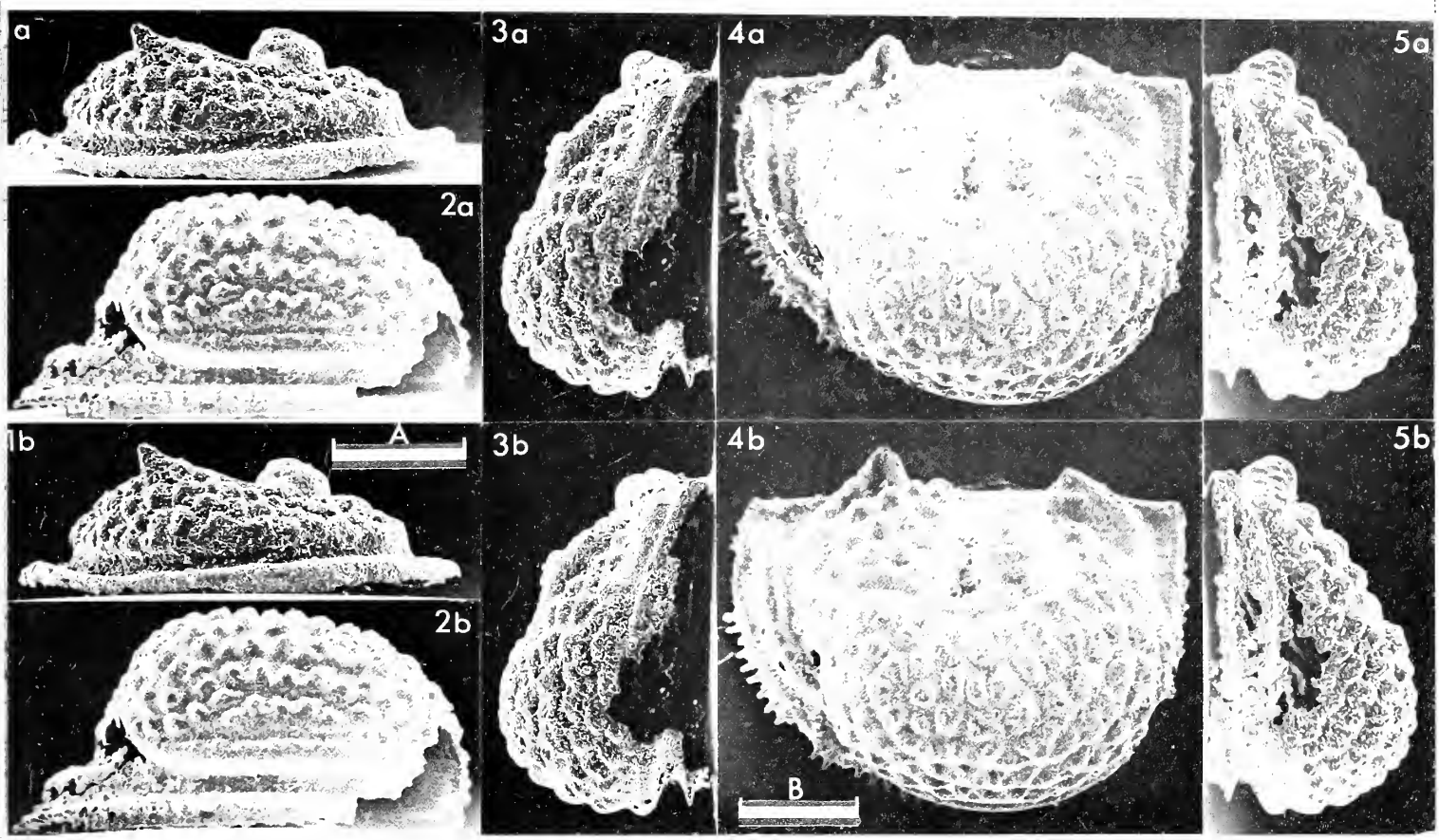
Fig. 1, tecnomorph RV, ext. vent. (**OS 6847**, 1600 μm long). Figs. 2–5, ♀ RV (holotype, **OS 6848**, 1800 μm long): fig. 2, ext. vent.; fig 3, ext. ant.; fig. 4, ext. lat.; fig. 5, ext. post.
Scale A (500 μm; × 37), fig. 1; scale B (500 μm; × 33), figs. 2–5.

Remarks: A combination of the nature of the lobation, ornament and subcruminal morphology allies this species to the subfamily Beyrichiinae Matthew, 1886. As such, however, the overall shape and extent of the crumina is unique. The smooth, almost flange-like velum is also unusual. The incursion of the posterior part of the crumina into syllobial space imitates conditions more normally associated with treposellids.

Renibeyrichia is comparable with *Beyrichia* (*Asperibeyrichia*) Martinsson, 1962, *Beyrichia* (*Scabribeyrichia*) Martinsson, 1962, and *Eobeyrichia* Henningsmoen, 1954 in having a zygal arch in both females and tecnomorphs. As in the beyrichiines *Calcaribeyrichia* Martinsson,1962, *Plicibeyrichia* Martinsson, 1962, *Gaunibeyrichia* Martinsson, 1962 and *Navibeyrichia* Martonsson, 1962, *Renibeyrichia* retains a ridge, rather than the more commonly found finger-print striation (cf. *Beyrichia* M'Coy, 1846), on the ventral part of the crumina. The assimilation within the carapace wall of much of the crumina and the lack of markedly abrupt differentiation between crumina and lobes is a relatively advanced trend known from other beyrichiines (cf. subgenus *Asperibeyrichia*), though the occurrence of an undisturbed zygal arch and fully developed beyrichiacean lobation shows that the Devonian *Renibeyrichia* is not far removed from primitive Silurian members of the subfamily.

Explanation of Plate 3, 4

Fig. 1, tecnomorph RV, ext. ant. (**OS 6847**); fig. 2, tecnomorph RV, ext. lat. (**OS 6847**); fig. 3, tecnomorph RV, ext. post. (**OS 6847**); fig. 4, ♂ RV, ext. dors. (holotype, **OS 6848**); fig. 5, tecnomorph RV, ext. dors. (**OS 6847**).
Scale A (500 μm; × 37), figs. 1–3, 5; scale B (500 μm; × 33), fig. 4.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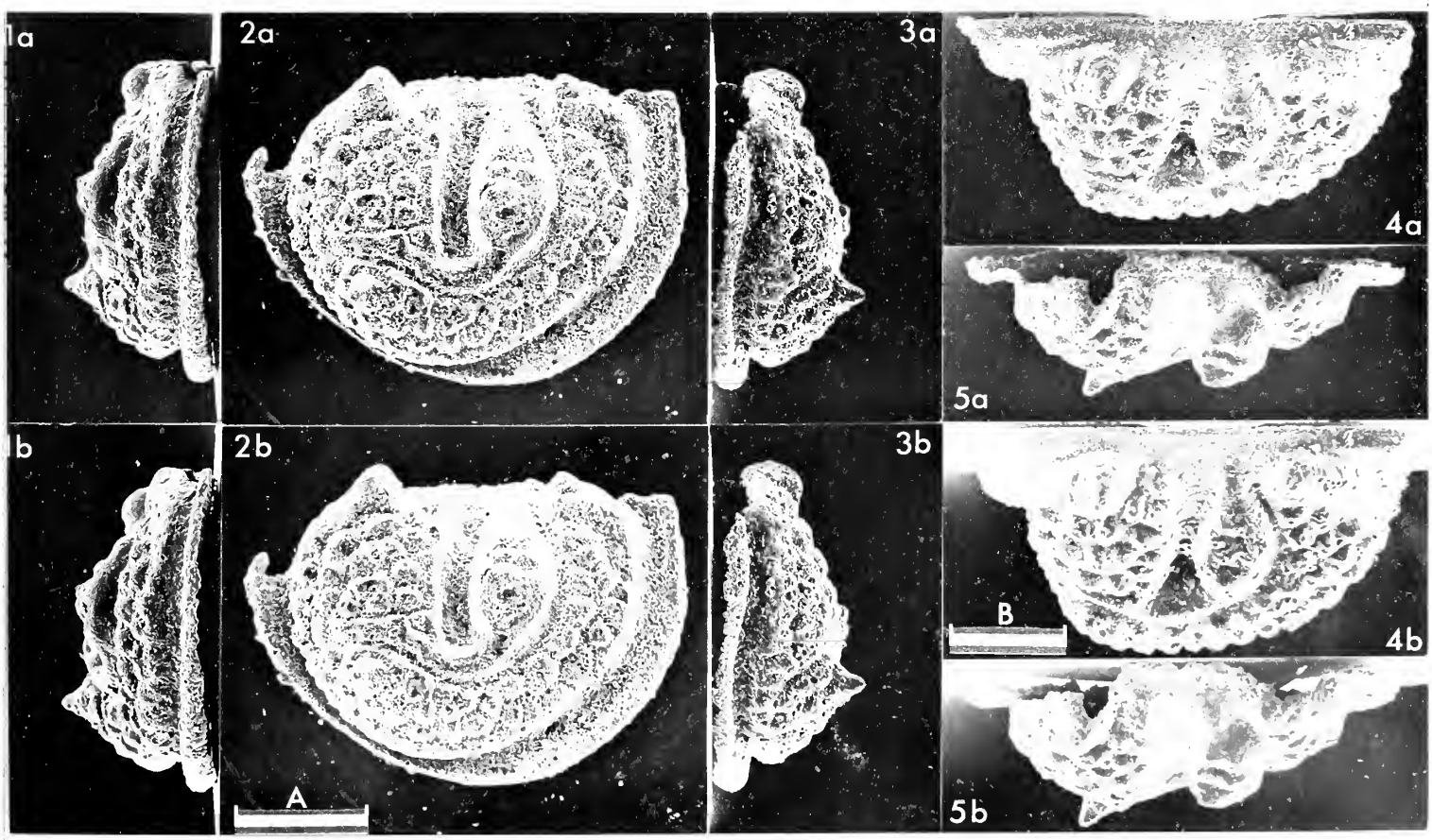
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B
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A
5b

Renibeyrichia mulciber sp. nov.

Holotype: Brit. Mus. (Nat. Hist.) **OS 6848**, ♀ RV.

Type locality: Left bank of R. Murrumbidgee, at 'Shearsby's Wallpaper', 1100 yd upstream from Old Taemas Bridge, SW of Yass, New South Wales, Australia; approx. lat. 35°0′S, long. 148°50′E; *Spirifer yassensis* Limestone, Murrumbidgee Series, Lower Devonian. Locality 1955/2 of White & Toombs 1972 (*Bull. Br. Mus. nat. Hist. (Geol.)* **22**, 411).

Derivation of name: Latin *Mulciber*, god of fire; from resemblance of ornament to volcanoes.

Figured specimens: Brit. Mus. (Nat. Hist.) nos. **OS 6847** (tecnomorph RV: Pl. **3**, 2, fig. 1; Pl. **3**, 4, figs. 1–3, 5), **OS 6848** (♀ RV: Pl. **3**, 2, figs. 2–5; Pl. **3**, 4, fig. 4; Pl. **3**, 8, figs. 2, 3), **OS 6849** (♀ LV: Pl. **3**, 8, fig. 1), **OS 6850** (tecnomorph RV: Pl. **3**, 6, figs. 1–4), **OS 6851** (tecnomorph LV: Pl. **3**, 8, fig. 4).

All valves silicified, ex-faunal phial **IN 49627**, obtained from Brit. Mus. (Nat. Hist.) *P. murrumbidgeensis* specimen **P. 33583** (see 'Remarks'), from type locality. Rock not *in situ*, collected from scree.

Diagnosis: Anterior lobal cusp and single syllobial cusp stoutly developed above the hinge line, mostly smooth. A prominent calcarine spine. Apex of preadductorial node extended to reach the dorsal margin of the valve.

Explanation of Plate 3, 6

Figs. 1–4, tecnomorph RV (**OS 6850**): fig. 1, ext. lat.; fig. 2, syllobial ornament; figs. 3, 4, ornament of anterior lobe.
Scale A (500 μm; × 37), fig. 1; scale B (150 μm; × 110), fig. 2; scale C (75 μm; × 275), fig. 3; scale D (25 μm; × 550), fig. 4.

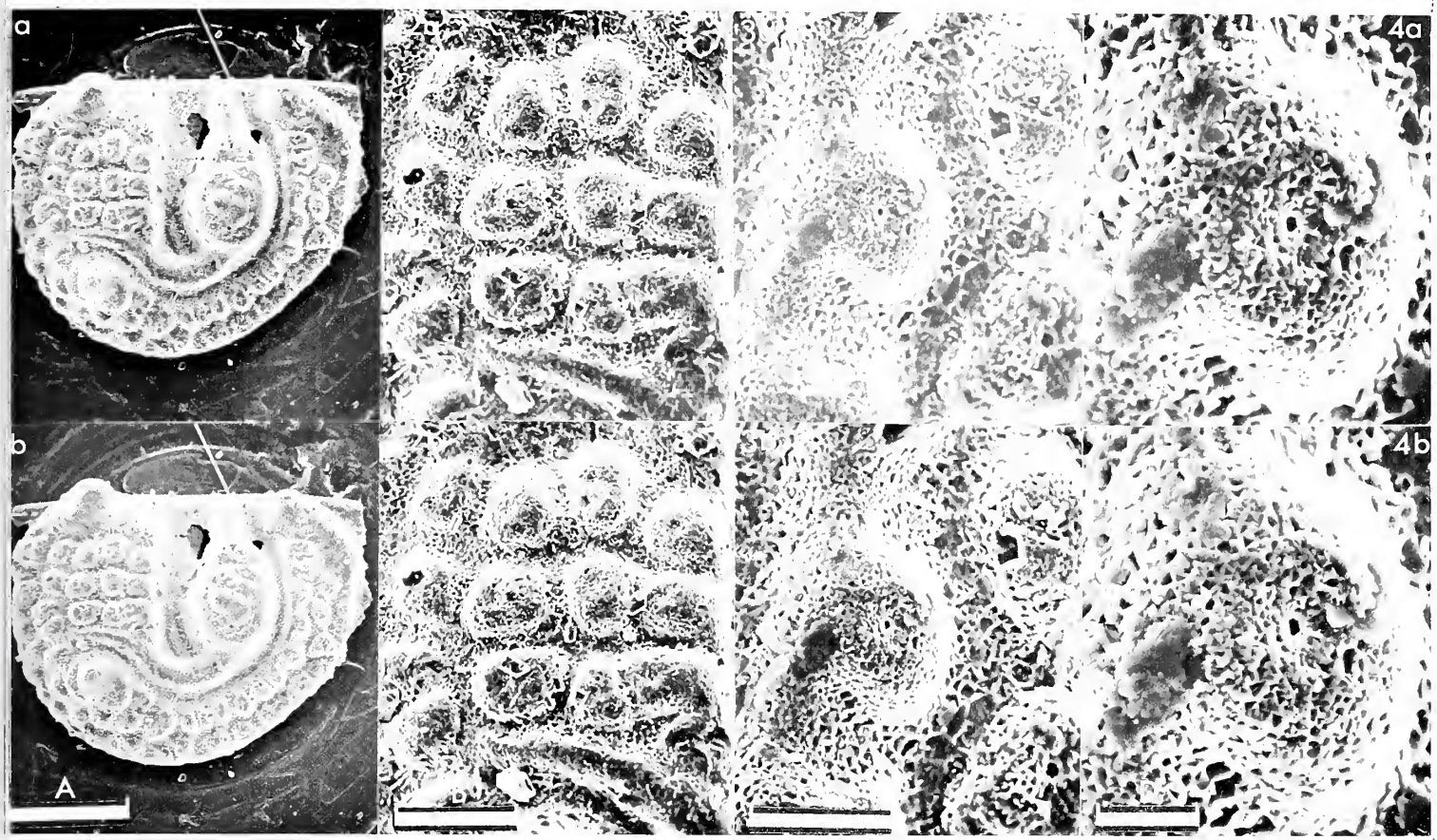
Remarks: *R. mulciber* is described from residues of a collection of Australian buchanosteid arthrodires made by Toombs and others during 1955 and 1963. Some of the arthrodire finds were documented (White & Toombs, op. cit.) as *Parabuchanosteus murrumbidgeensis* (White). Material [Brit. Mus. (Nat. Hist.)] consists of 25 valves, mostly fragmentary: figured specimens; faunal phials **IN 49627**, **IN 49628**; valves in faunal slide collection. There are six females, but no adult tecnomorphs.

A calcarine spine, always developed in tecnomorphs, may be present in females or, more usually, its position recognized by the occurrence of a conspicuous posterodorsal cruminal tubercle. Each tubercle has a single pore. The morphology of the syllobial groove and adjacent zygal arch is similar to that of *Beyrichia* (*Scabribeyrichia*) *churkini* Berdan & Copeland, 1973 (*Prof. Pap. U.S. geol. Surv.* **825**) from assumed late Lower Devonian (Emsian) of Alaska and Yukon Territory.

Distribution: Known only from the marine *S. yassensis* Limestone, Murrumbidgee Series, New South Wales; White & Toombs localities 1955/2 (type locality) and 1963/16 (left bank of Murrumbidgee, shore E of mouth of Oakey Creek, 1250 yd upstream of Old Taemas Bridge; fish specimen **P. 50389**). The Murrumbidgee Series (Browne, 1959, *J. Proc. R. Soc. N.S.W.* **92** for 1958) is correlated with supposed upper Lower Devonian (late Siegenian-Emsian) strata in the Wee Jasper area to the W (Pedder, Jackson & Philip, 1970, *J. Paleo.* **44**).

Explanation of Plate 3, 8

Fig. 1, ♀ LV, ext. lat. (**OS 6849**); fig. 2, ♀ RV, vent. obl., ventrolateral cruminal ornament (holotype, **OS 6848**); fig. 3, ♀ RV, dors., ornament near syllobial cusp (holotype, **OS 6848**); fig. 4, tecnomorph LV, ext. lat. (**OS 6851**).
Scale A (500 μm; × 31), fig. 1; scale B (200 μm; × 75), fig. 2; scale C (100 μm; × 150), fig. 3; scale D (500 μm; × 34), fig. 4.


a
b
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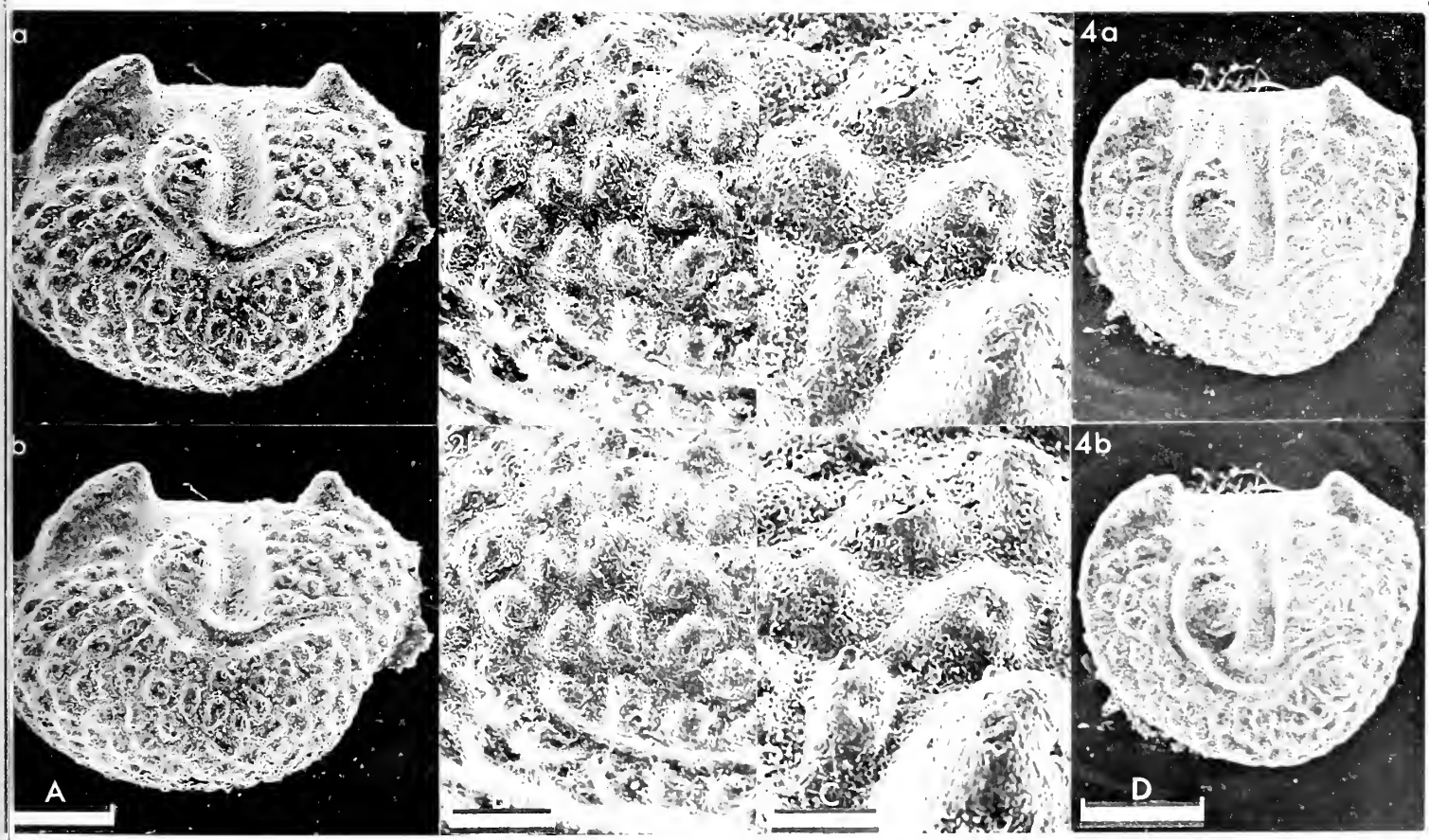
4b


a
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4b
D

595.339.14 (116.312) (44:161.006.44 + 44:161.004.44): 551.35

ON *PHILOMEDES DONZEI* NEALE sp. nov.

by John W. Neale
(*University of Hull, England*)

Philomedes donzei sp. nov.

1965 *Cypridina?* sp. nov. A; P. Donze, *Trav. Lab. Géol. Univ. Lyon* **12**, 100–101, pl. 3, figs. 71–74.

Holotype: University of Hull coll. no. **HU.152.C.1**, ♀ car.
[Paratypes: University of Hull coll. no. **HU.152.C.2**, ♀ LV. University of Lyon coll. nos. **157130**, ♀ car.; **157131**, ♀ car.; **157132**, ♀ LV and associated RV].

Type locality: Chabrières, Alpes-Haute-Provence, France; approx. lat. 44°02′N, long. 6°16′E. From the basal Valanginian of the Vocontian Trough.

Derivation of name: In honour of Dr P. Donze of the University of Lyon.

Figured specimens: University of Hull coll. no. **HU.152.C.1** (♀ car.: Pl. **3**, 10, figs. 2, 3). University of Lyon coll. nos. **157130** (♀ car.: Pl. **3**, 12, fig. 1), **157131** (♀ car.: Pl. **3**, 12, fig. 2), **157132** (♀ LV, RV with musc. sc. pattern: Text-fig. 1); unnumbered specimen (♂ car.: Pl. **3**, 10, fig. 1).

Explanation of Plate 3, 10

Fig. 1, ♂ car., ext. lt. lat. (unnumbered specimen, 1065 μm long). Figs. 2, 3, ♀ car. (holotype, **HU.152.C.1**, 1117 μm long): fig. 2, ext. lt. lat.; fig. 3, ext. rt. lat.
Scale A (200 μm; × 60), fig. 1; scale B (200 μm; × 59), figs. 2, 3.

Figured specimens (contd.): Unnumbered specimen from locality *c.* 50 m from entrance to grounds of Château de Malbos, Berrias–la Rouvière road, France; approx. lat. 44°23′N, long. 4°12′E; basal Valanginian. All other specimens are from the type locality.

Diagnosis: Smooth, thick-shelled. In lateral view female almost equidimensional, male more elongate.

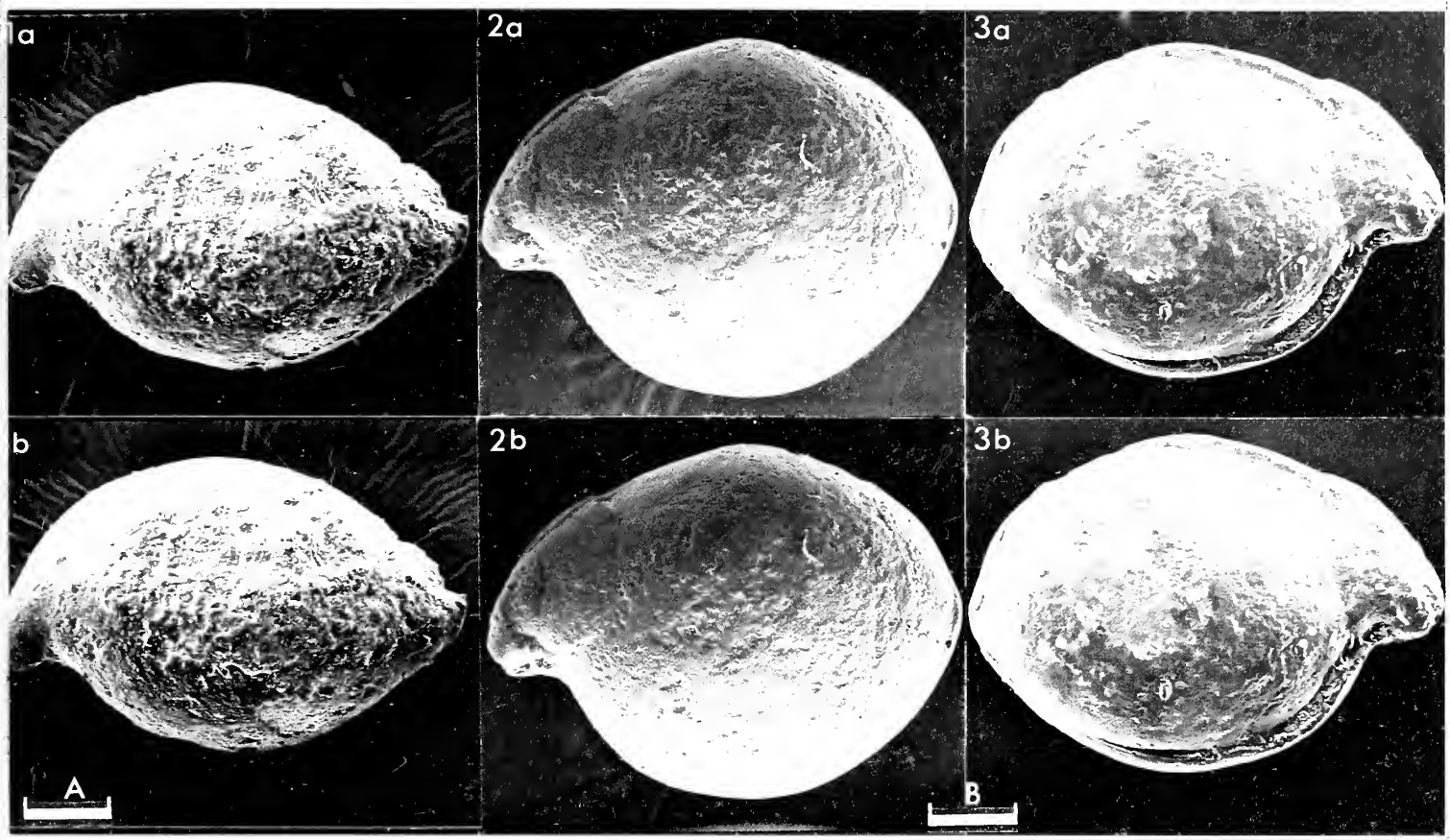
Remarks: Myodocopida are rare in the geological record. This species has a similar muscle scar pattern and the strong sexual dimorphism of *Philomedes* but is heavily calcified suggesting that its swimming ability was more limited than present species of the genus. Specimens of "*Cypridina?* sp. nov. A" figured by Donze (1965) from a similar horizon at Berrias, Ardèche are the males of this species (see Pl. **3**, 10, fig. 1).

Distribution: Dr Donze informs me that this species occurs widely in the Vocontian Trough where it is an important marker, being confined to the basal Valanginian Beds and not so far found above the base of the *Kilianella roubaudi* Zone.

Text-fig. 1. ♀ LV, ext. musc. sc. (**157132**).

Explanation of Plate 3, 12

Fig. 1, ♂ car., ext. dors. (**157130**, 1039 μm long); fig. 2, ♀ car., ext. vent. (**157131**, 1156 μm long).
Scale A (200 μm; × 81), figs. 1, 2.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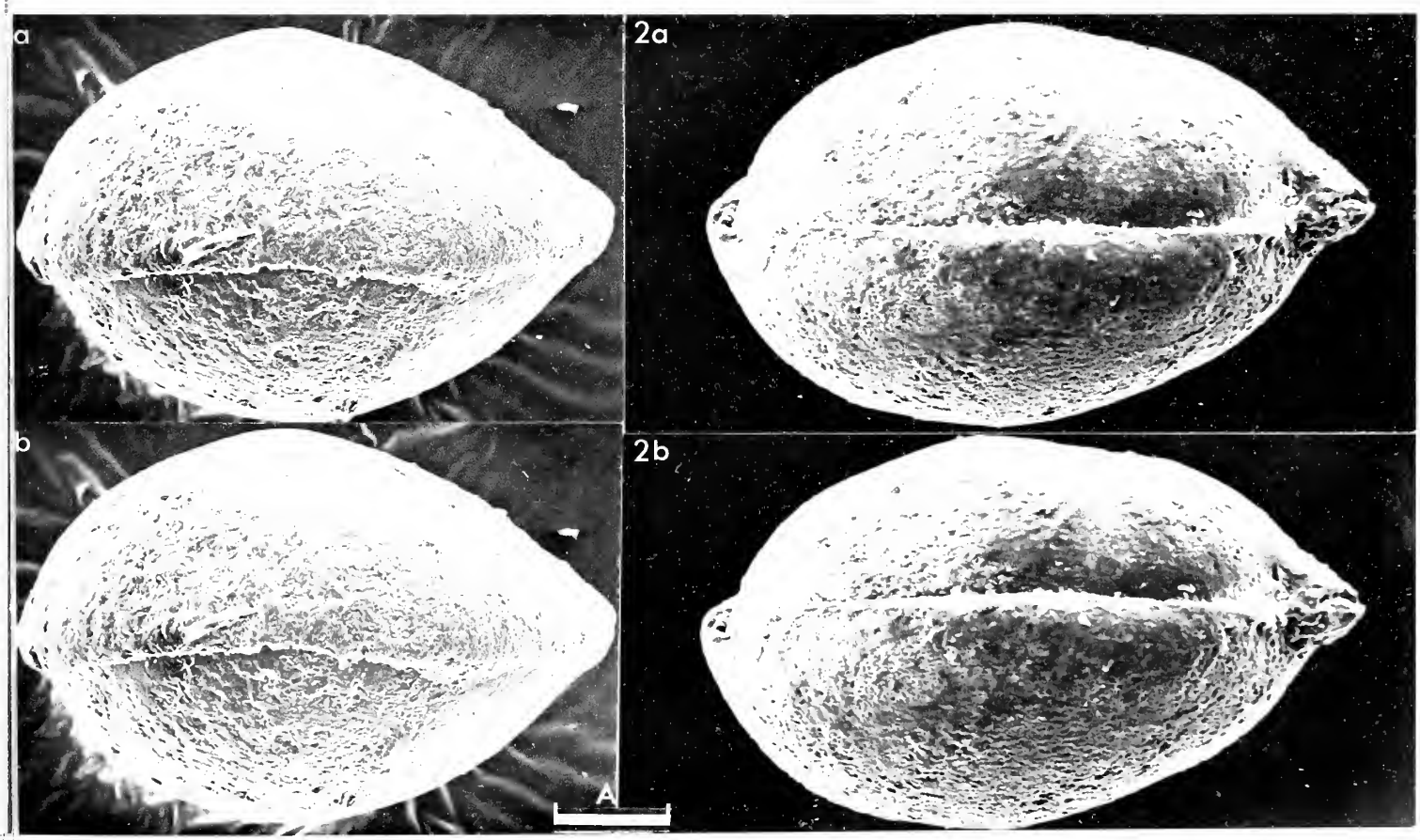
B


a
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2b
A

59.5.337.12 (119.9) (548.7:161.079.07):551.312

ON *CENTROCYPRIS VIRIDIS* NEALE sp. nov.

by John W. Neale
(*University of Hull, England*)

Centrocypris viridis sp. nov.

Holotype: University of Hull coll. no. **HU.250.R.1**, ♀ RV, LV, limbs and soft parts. [Paratypes: University of Hull coll. nos. **HU.250.R.2–9** (all ♀)].

Type locality: A tank at Ma-Eliya, near Battuluoya, Sri Lanka; approx. lat. 7°48′N, long. 79°55′E. Recent.

Derivation of name: From the Latin *viridis*, green; referring to the beautiful deep green colour observed in fresh material.

Figured specimens: University of Hull coll. nos. **HU.250.R.4a** (♀ LV, RV: Pl. **3**, 14, figs. 1, 2; Pl. **3**, 18, fig. 2), **HU.250.R.1a,b** (♀ LV, RV, limbs & soft parts: Pl. **3**, 16, figs. 1, 2; Pl. **3**, 18, figs. 1, 3; Text-figs. 1, 2), **HU.250.R.2a** (♀ LV, RV: Pl. **3**, 20, figs. 1–3). All specimens are from the type locality.

Diagnosis: Shell covered with small spines, not strongly vaulted posterodorsally in lateral view, furcal rami slender.

Explanation of Plate 3, 14

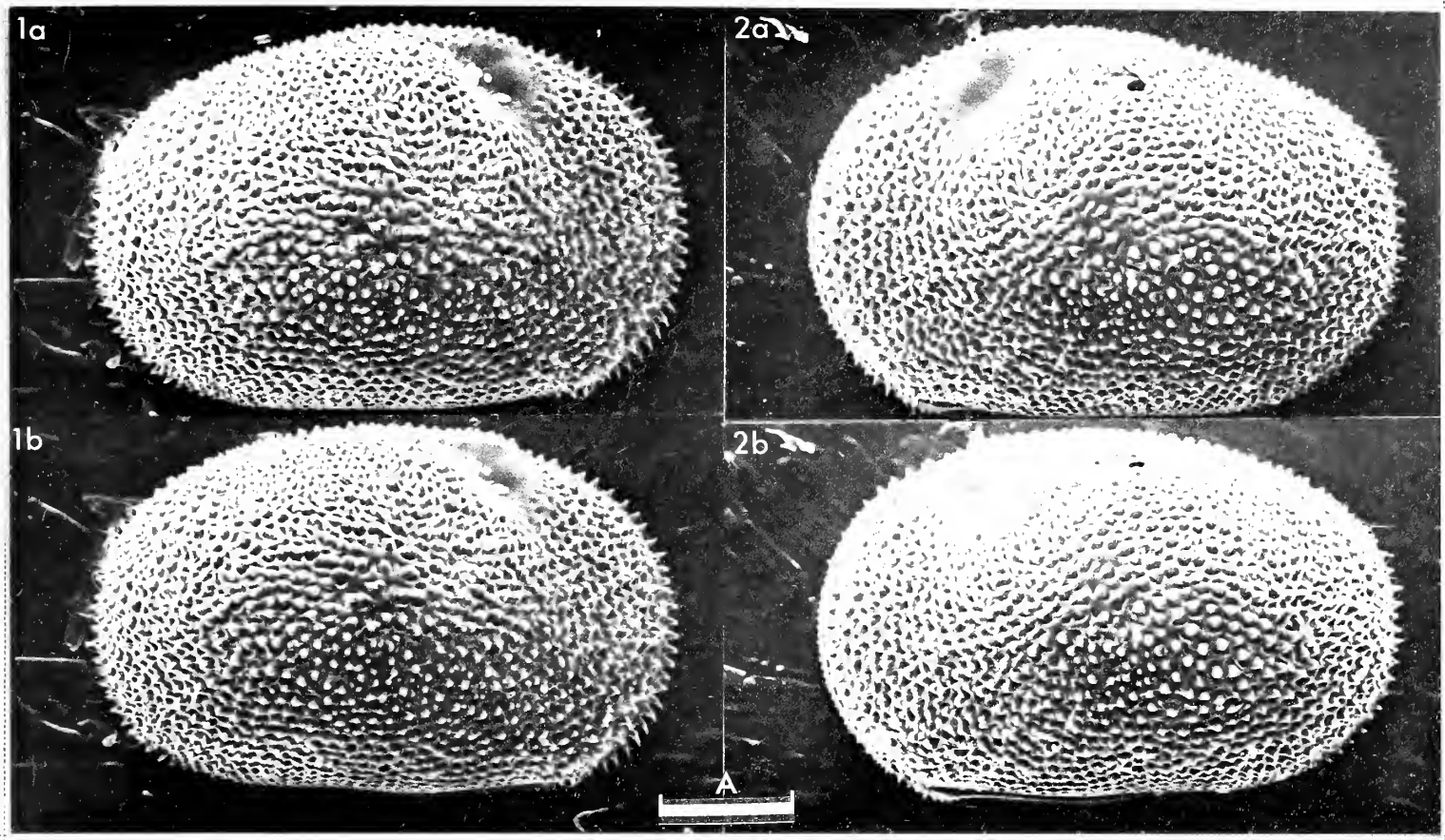
Figs. 1, 2, ♀ (**HU.250.R.4a**, 920 μm long): fig. 1, RV, ext. lat.; fig. 2, LV, ext. lat.
Scale A (200 μm; × 90), figs. 1, 2.

Remarks: The three species of *Centrocypris* so far described have all come from Africa or from islands associated with the African mainland, although Hartmann (1964, *Int. Revue ges. Hydrobiol.*) has recorded *Centrocypris horrida* Vavra, 1895 from a single locality in India. *Centrocypris viridis* differs from *Centrocypris jakulskii* Grochmalicki, 1914 (the closest of the three species of *Centrocypris*) in the lesser vaulting of the shell posterodorsally in lateral view and the somewhat more slender furcal rami. In the E African *C. jakulskii* the furcal claws are the same length but in *C. viridis* the sub-terminal claw is typically shorter than the terminal claw although there is some variation in this and about 20% of the specimens examined have the furcal claws of equal length. From *C. horrida* (Zanzibar, E Africa, Aldabra Island and India) the Sri Lanka species differs in lacking the strong marginal spination. From *Centrocypris margaritifera* Müller, 1898 (Madagascar), *C. viridis* differs in the absence of ribbing on the ventral surface, the absence of a posteroventral spine and in the very much shorter dorsal seta on the furca which in Müller's species appears to be equal in length to the sub-terminal claw.

Distribution: *C. viridis* appears to be well established in Sri Lanka, the type locality yielding 146 specimens and paddy fields at Karainagar East, Jaffna (lat. 9°44′N, long. 79°53′E) providing another 38. In the Ma-Eliya sample the species was associated with *Cypris subglobosa* Sowerby, *Stenocypris major* (Baird), *Cypretta globosa* (Brady), *Hemicypris pyxidata* (Moniez) and a new species of *Strandesia*. At Karainagar East the sample contained only *C. viridis*, but another sample from the same locality contained *C. subglobosa* Sowerby and the same new species of *Strandesia*.

Explanation of Plate 3, 16

Figs. 1, 2, ♀ (holotype, **HU.250.R.1a**, 950 μm long): fig. 1, RV, int. lat.; fig. 2, LV, int. lat.
Scale A (200 μm; × 84), figs. 1, 2.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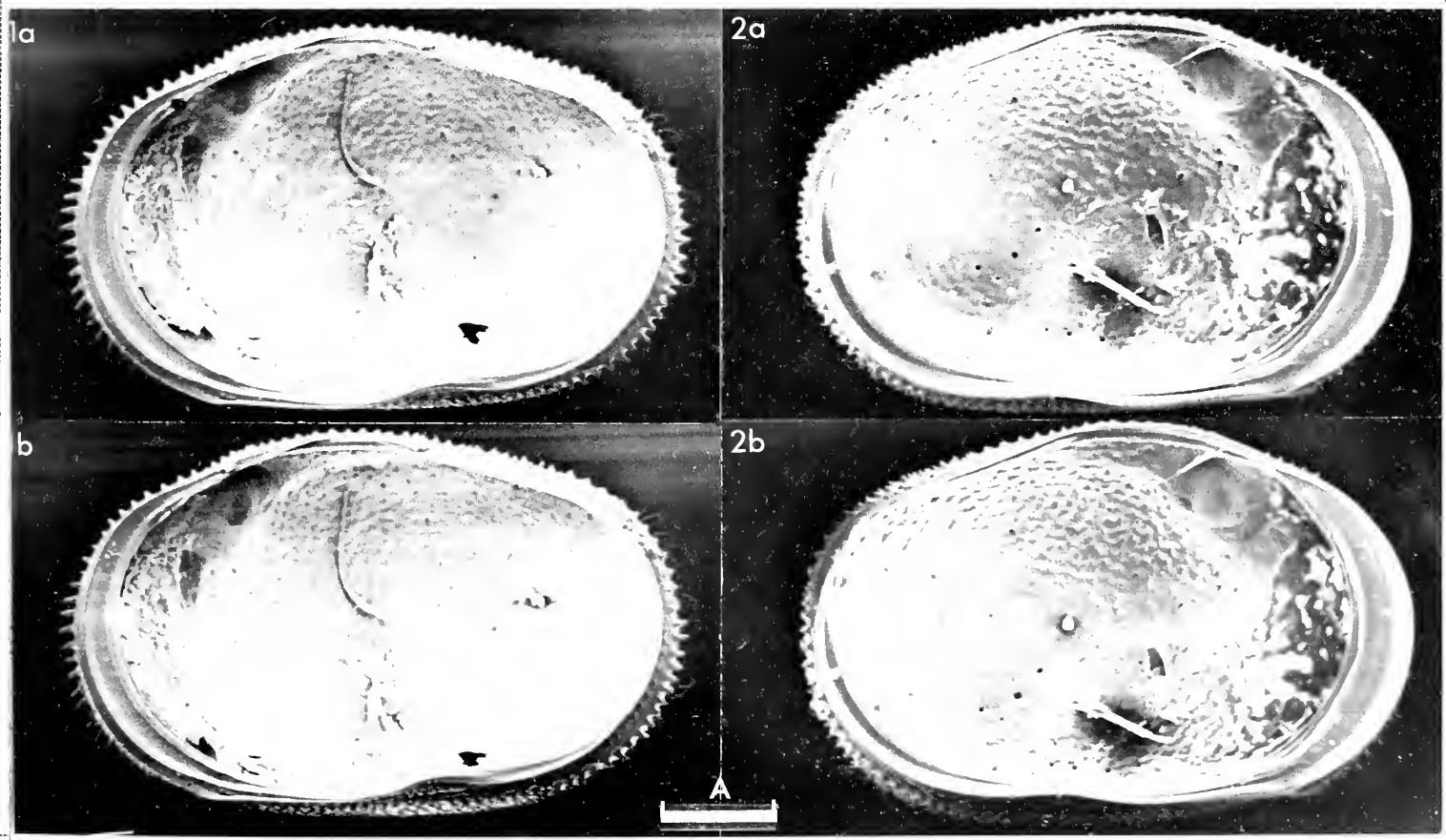
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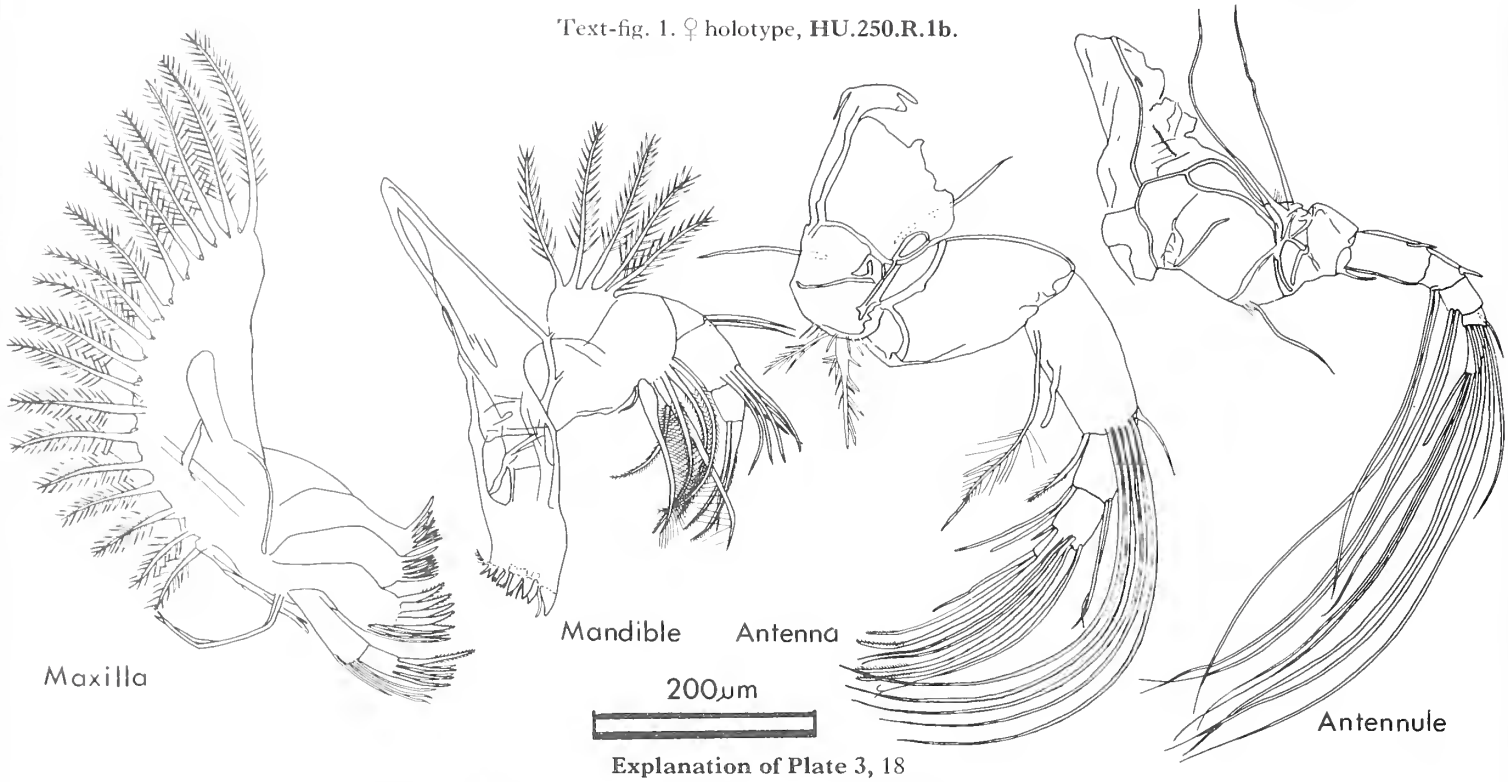
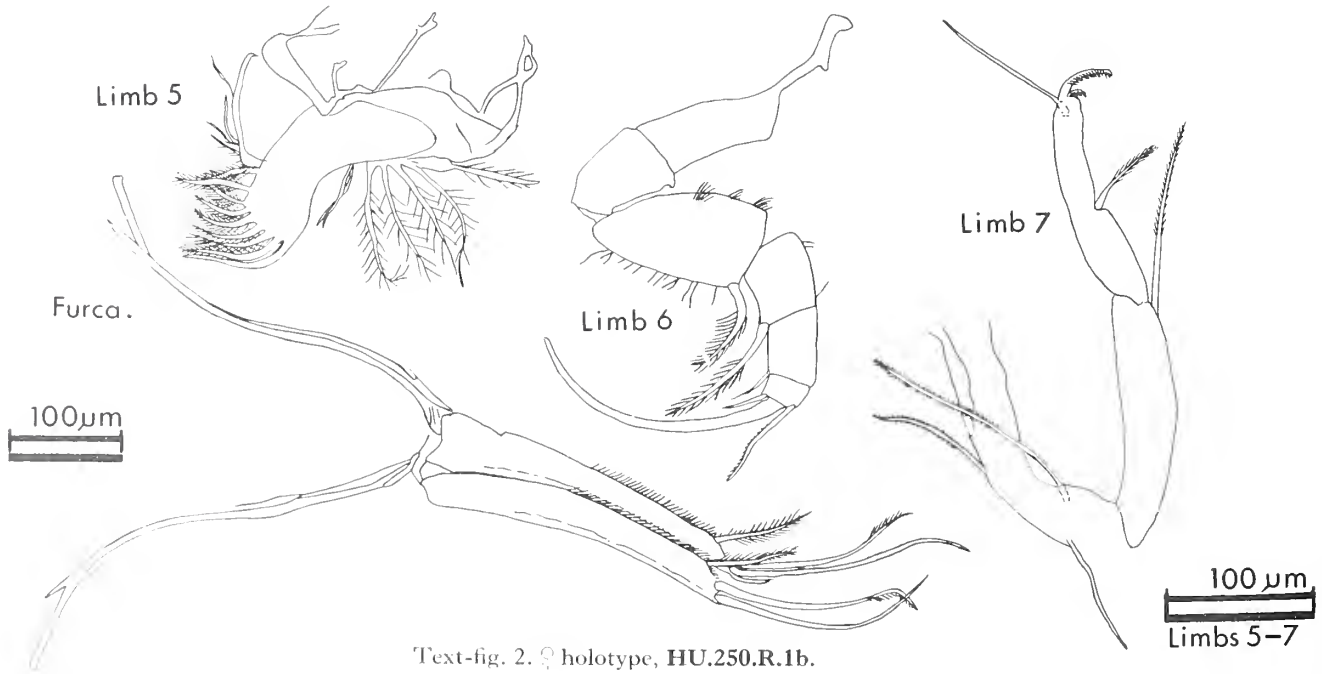
Text-fig. 1. ♀ holotype, **HU.250.R.1b.**



Explanation of Plate 3, 18

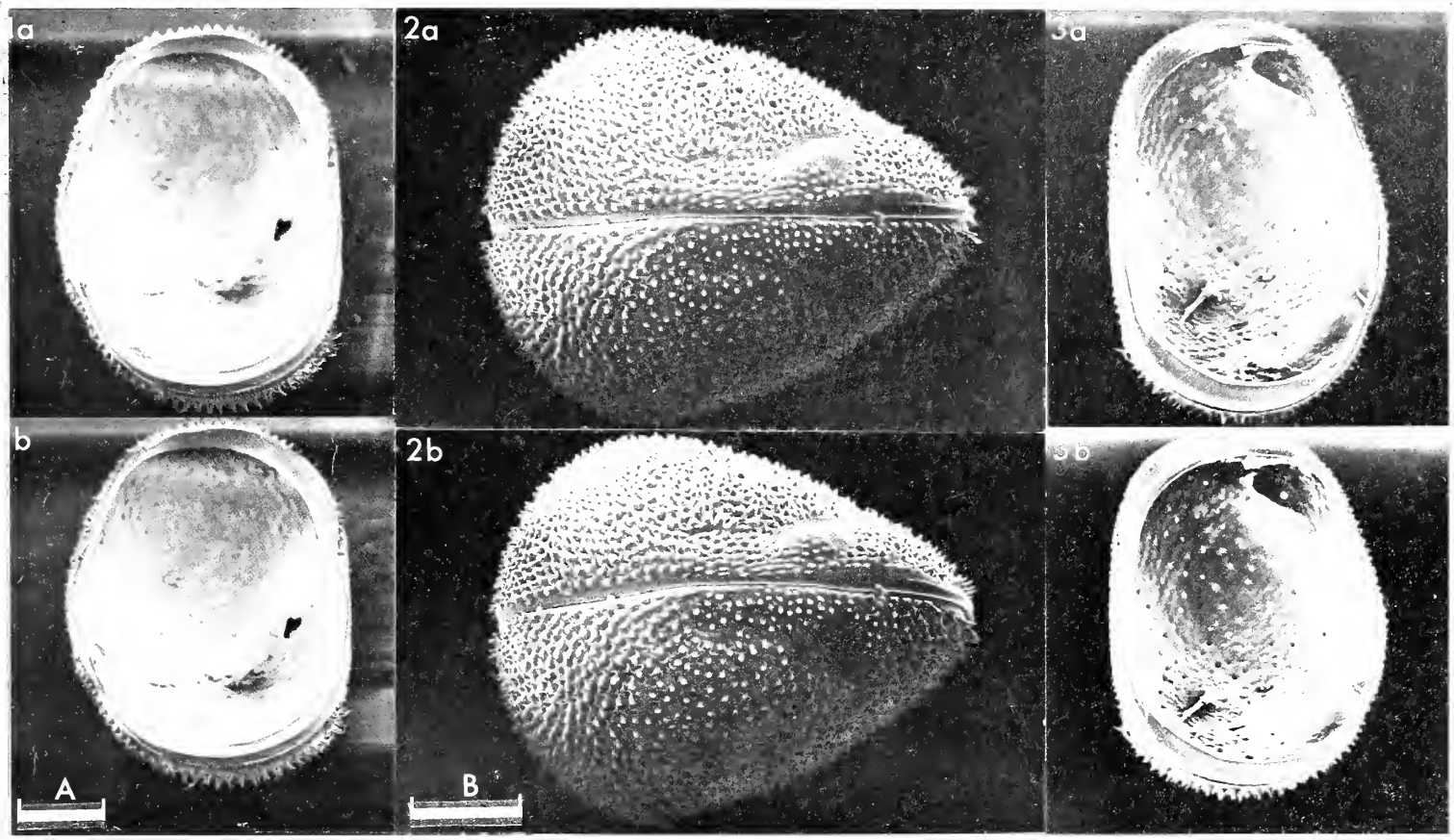
Fig. 1, ♀ RV, int. ant. obl. (holotype, **HU.250.R.1a**); fig. 2, ♀ car. ,ext. dors. (**HU.250.R.4a**); fig. 3, ♀ LV, int. ant. obl. (holotype, **HU.250.R.1a**).
Scale A (200 µm; · 63), figs. 1, 3; scale B (200 µm; · 72), fig. 2.



Text-fig. 2. ♀ holotype, **HU.250.R.1b.**

Explanation of Plate 3, 20

Figs. 1–3, . (**HU.250.R.2a**, 1000 µm long): fig. 1, LV, ant. margin; fig. 2, RV, int. musc. sc.; fig. 3, RV, post. margin.
Scale A (100 µm; · 125), fig. 1; scale B (40 µm; · 450), fig. 2; scale C (100 µm; · 180), fig. 3.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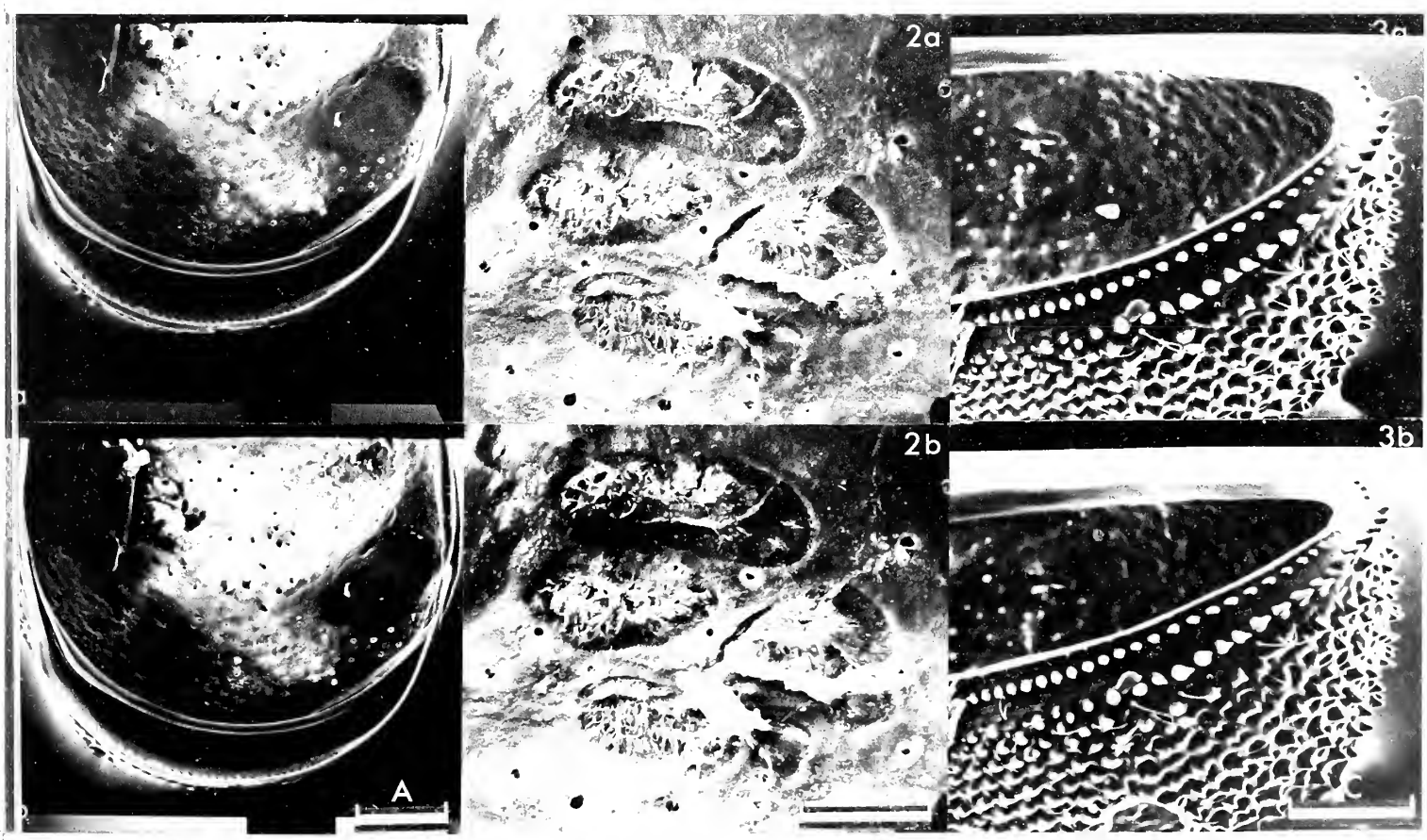

2a
3a
2b
3b
A
C

ON *ONCOCYPRIS PUSTULOSA* GURNEY

by John W. Neale
(*University of Hull, England*)

Oncocypris pustulosa Gurney, 1916

1916 *Oncocypris pustulosa* sp. nov. R. Gurney, *Proc. zool. Soc. Lond.* 1916, 340, pl. 3, figs. 17–21.
1963 *Oncocypris pustulosa* Gurney, 1916; E. Triebel, *Senckenberg biol.* **44**, 35.
1975 *Oncocypris pustulosa* Gurney, 1916; R. G. Michael & R. Victor, *J. nat. Hist.* **9**, 509, text-figs. 1A-F.

Type specimens: The repository is unknown.

Type locality: A tank by Lady Horton's Drive at Kandy, Sri Lanka (Ceylon); approx. lat. 7°17′N, long. 80°40′E. Recent.

Figured specimens: University of Hull coll. nos. **HU.244.R.2a** (♀ LV, RV: Pl. **3**, 22, fig. 1; Pl. **3**, 26, fig. 3), **HU.244.R.1a** (♂ LV, RV: Pl. **3**, 22, figs. 2, 3; Pl. **3**, 24, figs. 1, 2; Pl. **3**, 26, figs. 1, 2; Pl. **3**, 28, figs. 2, 3), **HU.244.R.1b** (♂ limbs & soft parts: Pl. **3**, 28, fig. 1; Text-figs. 1, 2).

Explanation of Plate 3, 22

Fig. 1, ♀ RV, ext. lat. (**HU.244.R.2a,** 545 μm long); fig. 2, ♂ RV, ext. ant. obl. (**HU.244.R.1a,** 493 μm long); fig. 3, ♂ RV, ext. lat. (**HU.244.R.1a**).
Scale A (100 μm; × 132), fig. 1; scale B (100 μm; × 144), figs. 2, 3.

Figured specimens (contd.): All specimens are from Rambewewa near Nochchiyagama, Sri Lanka; approx. lat. 8°17′N, long. 80°12′E.

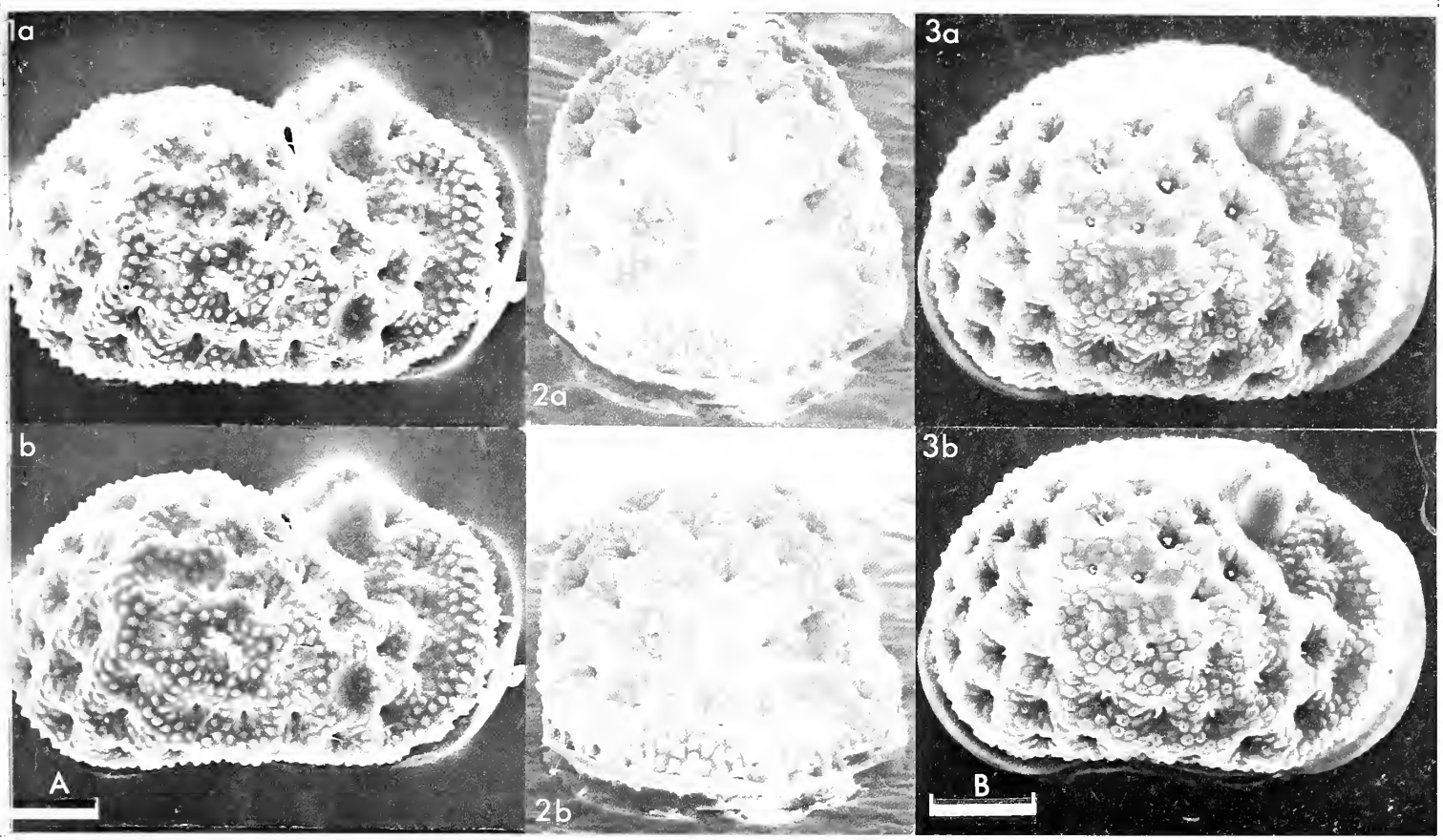
Diagnosis: Strongly vaulted carapace, egg-shaped in dorsal view, covered with pustules and with well developed eye tubercles and post-ocular sulcus. Left and right clasping limbs (limb 5) of male dissimilar. The flagelliform furca is characteristic of the genus.

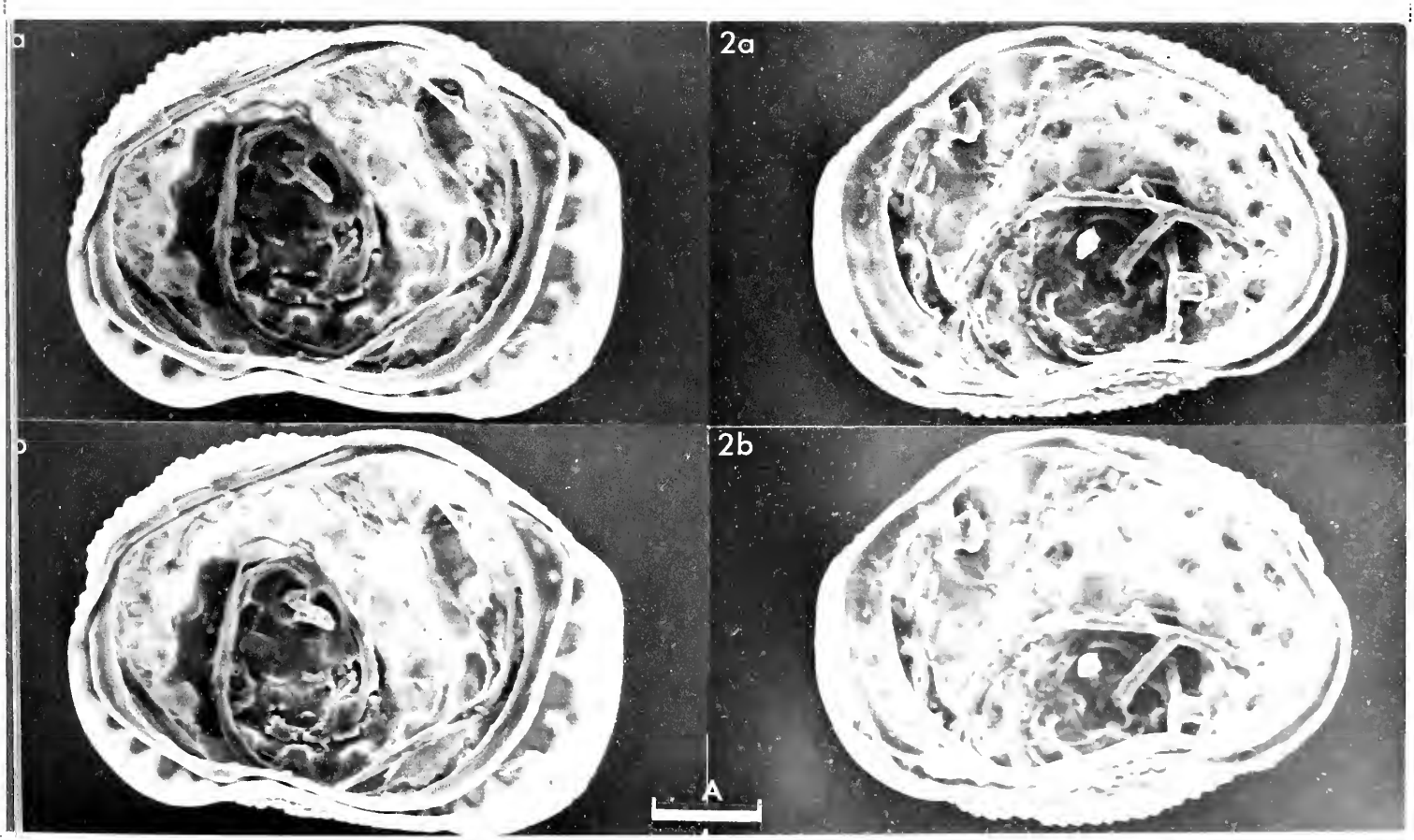
Remarks: Gurney (1916) noted that there was a single small seta on the maxilla (*recte* second maxilla on his terminology) and that G. W. Müller (1898, *Abh. seuckenb. naturforsch. Ges.* **21**, 286) gives the absence of a respiratory plate on this limb as a feature of the genus. Michael & Victor (1975) note that in their material from a coastal freshwater pond in Kerala State, S India, there is an unmistakable respiratory plate on the second maxilla although they do not figure it. The Sri Lanka material confirms this and is figured here, the left and right parts of this limb in the male being dissimilar. Michael & Victor (1975) note 17 rosettes in the Zenker's organ. Present material shows that the number varies between 16 and 18. Carapace shows sexual dimorphism, in the present material the male being shorter and higher than the female.

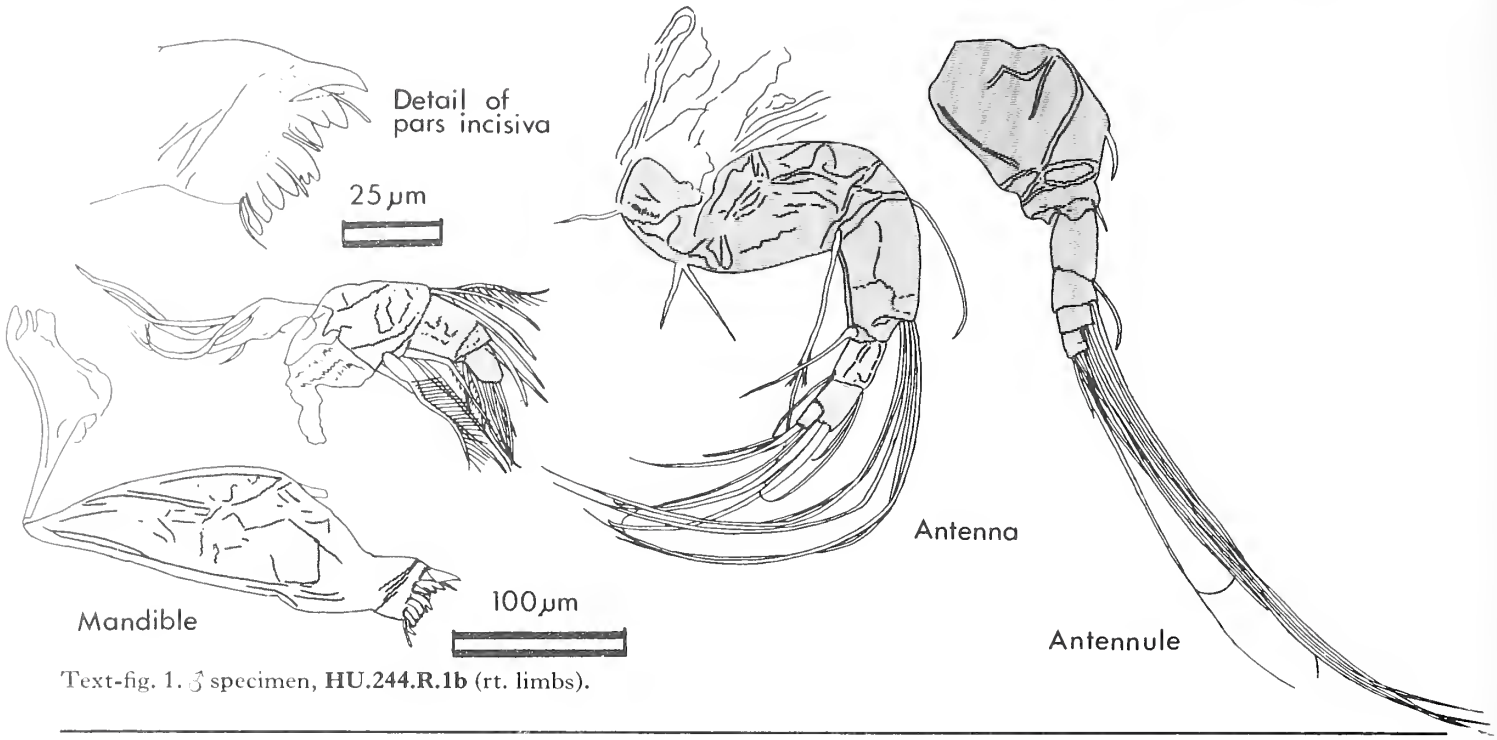
Distribution: This species has only been found in Sri Lanka and S India (Kerala).

Explanation of Plate 3, 24

Fig. 1, ♂ LV, int. lat. (**HU.244.R.1a**); fig. 2, ♂ RV, int. lat. (**HU.244.R.1a**).
Scale A (100 μm; × 156), figs. 1, 2.


1a
2a
3a
b
A
2b
3b
B

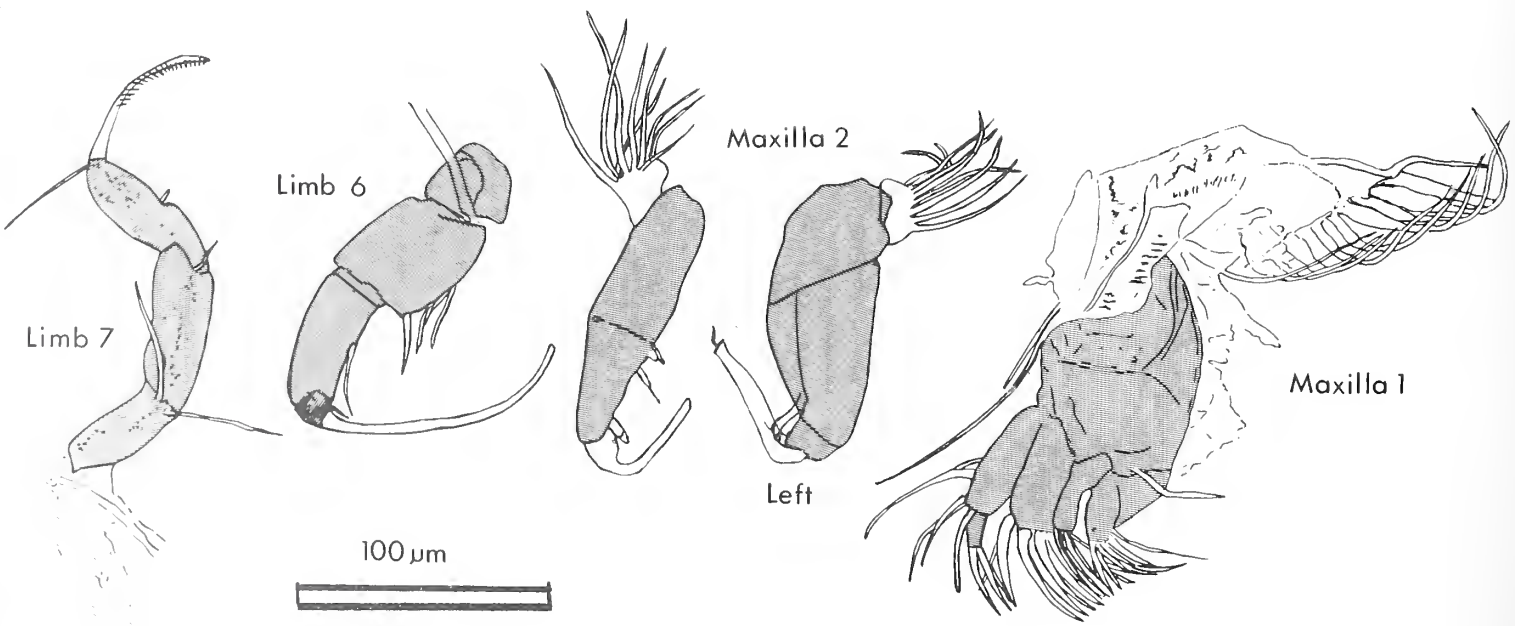

a
2a
b
2b
A



Text-fig. 1. ♂ specimen, **HU.244.R.1b** (rt. limbs).

Explanation of Plate 3, 26

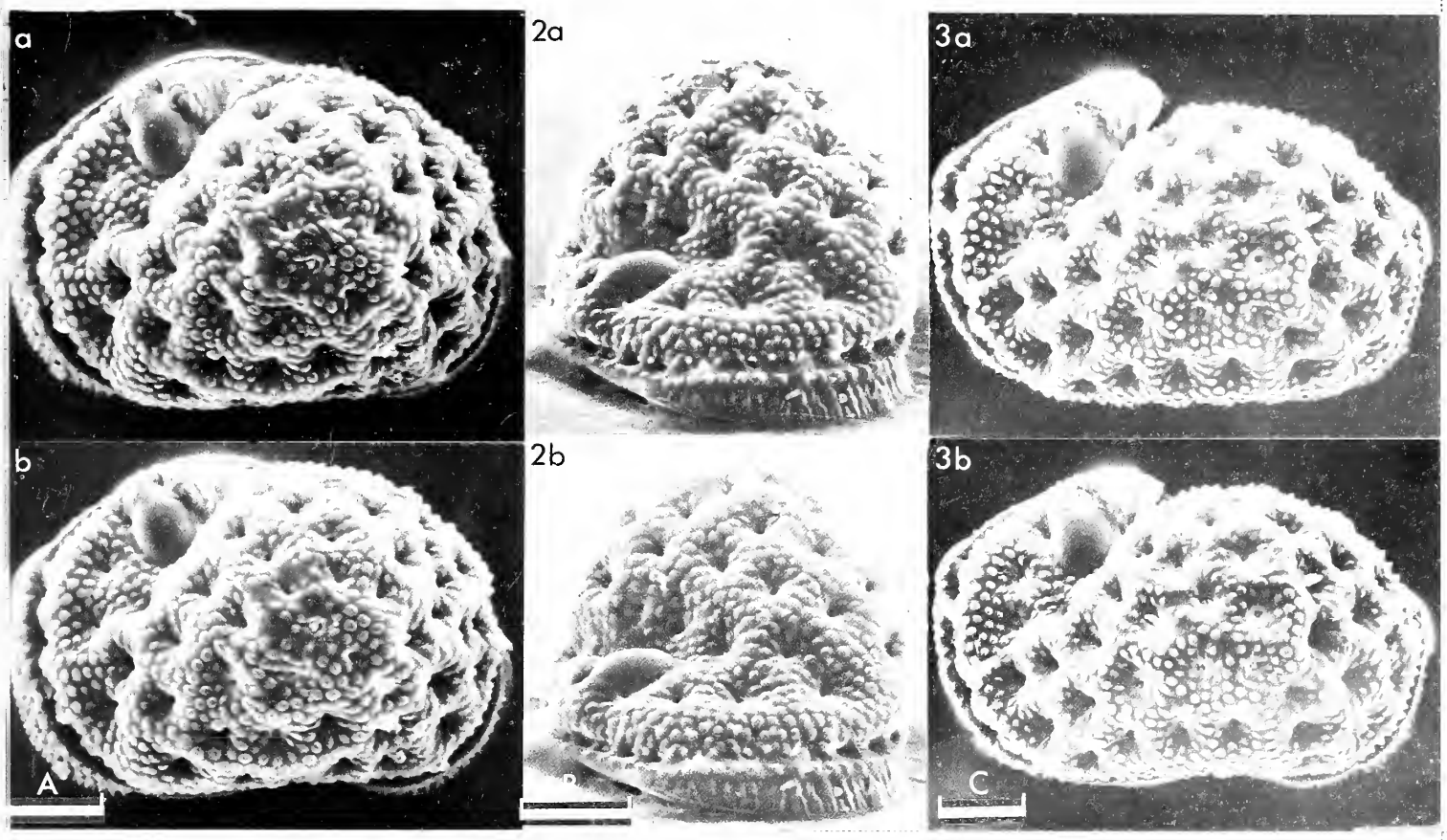
Fig. 1, ♂ LV, ext. lat. (**HU.244.R.1a**); fig. 2, ♂ LV, ext. ant. obl. (**HU.244.R.1a**); fig. 3, ♀ LV, ext. lat. (**HU.244.R.2a**). Scale A (100 µm; × 142), fig. 1; scale B (100 µm; × 151), fig. 2; scale C (100 µm; × 128), fig. 3.

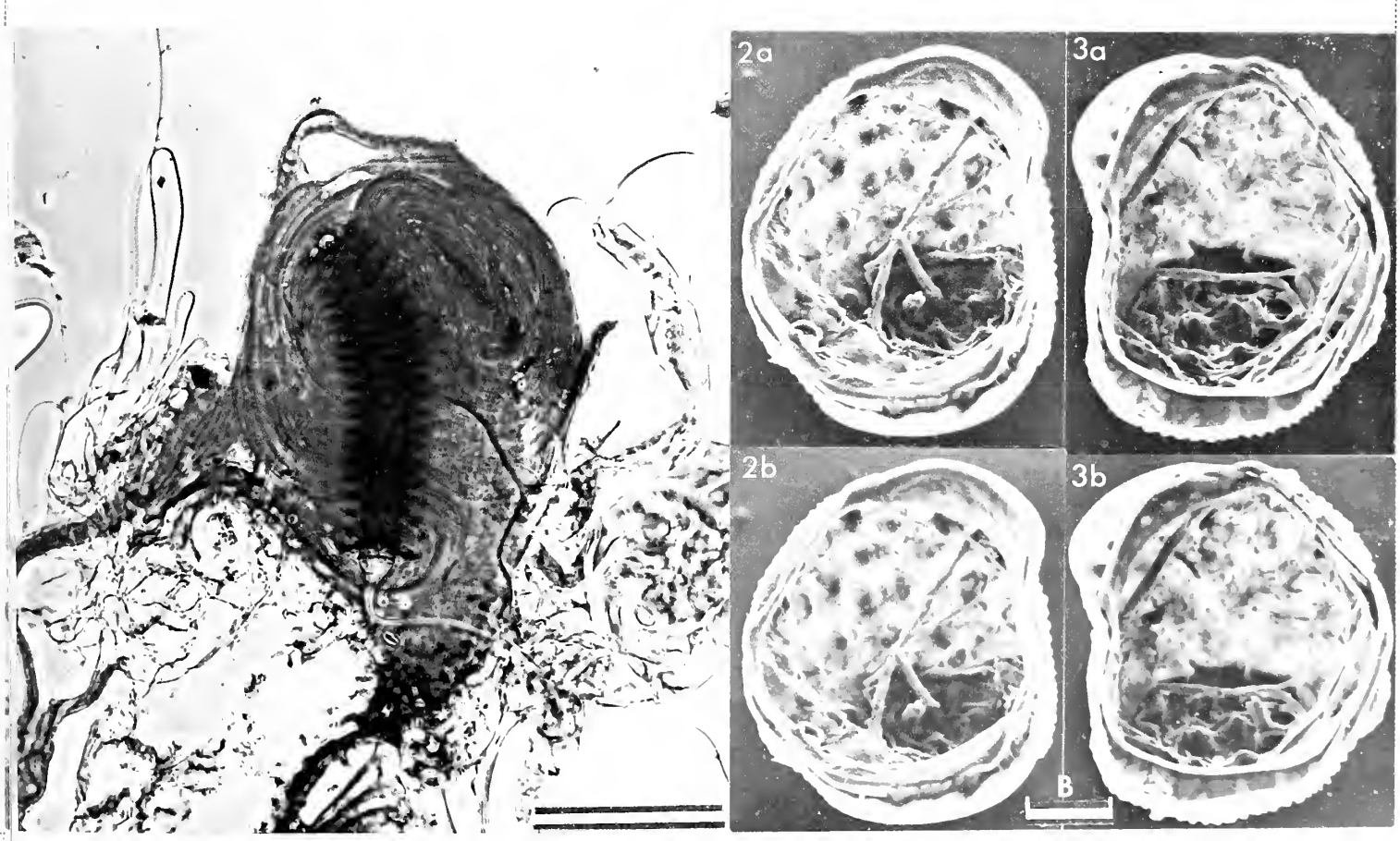


Text-fig. 2. ♂ specimen, **HU.244.R.1b** (all rt. limbs except where stated).

Explanation of Plate 3, 28

Fig. 1, ♂, Zenker's organ (**HU.244.R.1b**); fig. 2, ♂ RV, int. ant. obl. (**HU.244.R.1a**); fig. 3, ♂ LV, int. ant. obl. (**HU.244.R.1a**). Scale A (100 µm; × 278), fig. 1; scale B (100 µm; × 128), figs. 2, 3.


a
2a
3a
b
2b
3b
A
C


2a
3a
2b
3b
B

Stereo-Atlas of Ostracod Shells 3 (5) 29–36 **(1976)**
595.337.12 (119.9) (548.7: 161.081.06): 551.312

ON *STENOCYPRIS FERNANDOI* NEALE sp. nov.

by John W. Neale
(*University of Hull, England*)

Stenocypris fernandoi sp. nov.

Holotype: University of Hull coll. no. **HU.239.R.5,** ♀ RV, LV, limbs and soft parts.
[Paratypes: University of Hull coll. nos. **HU.239.R.1–4, 6–8** (five ♂♂, two ♀♀)].

Type locality: Pond, Yala-Palatupana, Sri Lanka; approx. lat. 6°19N′, long. 81°27′E. Recent.

Derivation of name: In honour of Professor C. H. Fernando of the University of Waterloo, Ontario, Canada.

Figured specimens: University of Hull coll. nos. **HU.239.R.7a** (♀: Pl. **3**, 30, figs. 1, 2), **HU.239.R.5a** (♀: Pl. **3**, 32, figs. 1, 2; Pl. **3**, 34, figs. 1, 2; Pl. **3**, 36, figs. 3, 4), **HU.239.R.1b** (♂: Pl. **3**, 36, fig. 1), **HU.239.R.8b** (♂: Pl. **3**, 36, fig. 2). All specimens are from the type locality.

Explanation of Plate 3, 30

Figs. 1, 2, ♀ RV (**HU.239.R.7a**, 4620 μm long): fig. 1, ext. lat.; fig. 2, ext. lat. post. termination.
Scale A (1 mm; × 22), fig. 1; scale B (40 μm; × 250), fig. 2.

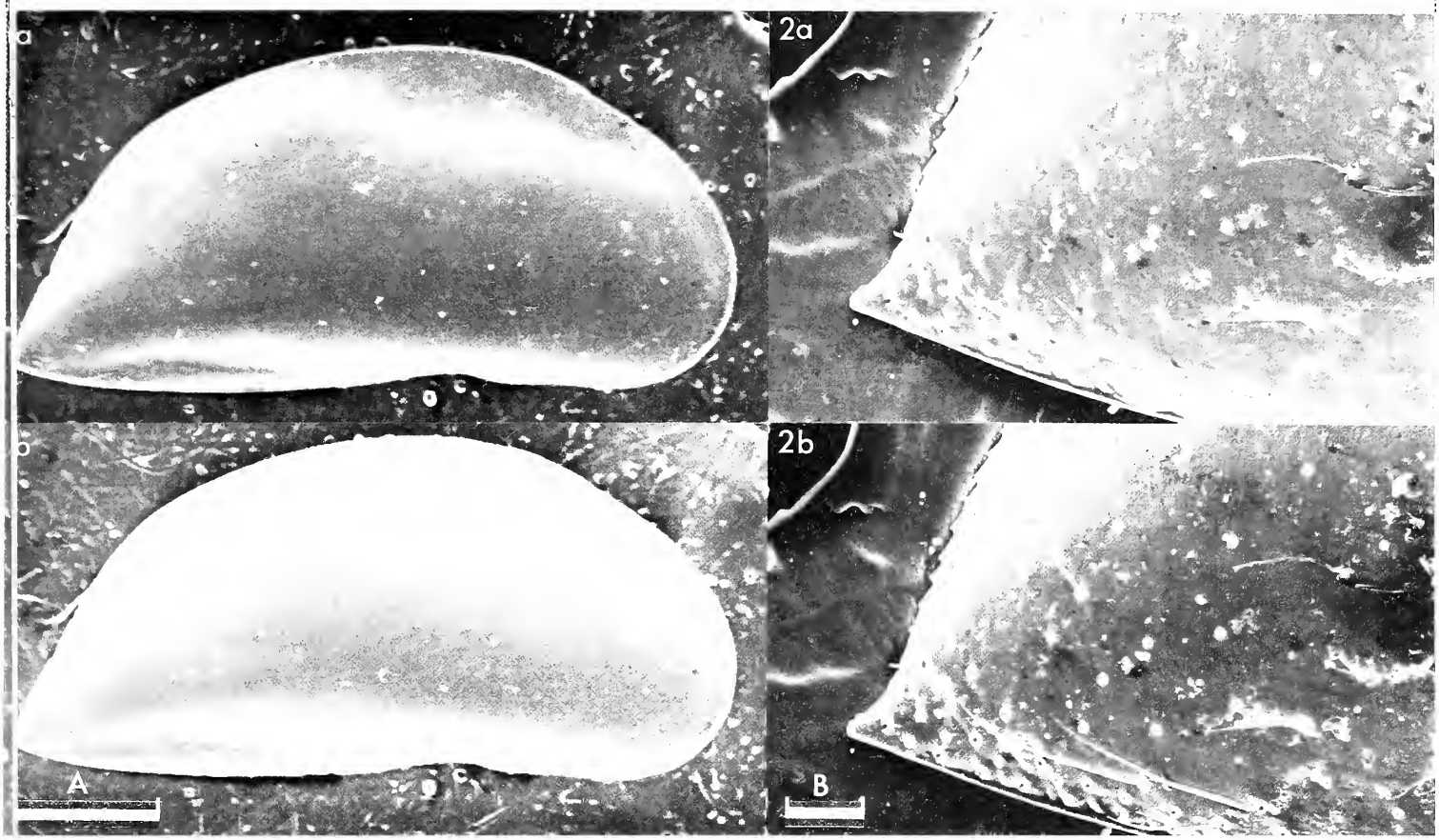
Diagnosis: A large stenocyprid (length: ♂♂ 3·98–4·54 mm, ♀♀ 4·62–5·05 mm) with sharply pointed posterior termination. Marked sexual dimorphism in second and fifth limbs. Furcal rami assymetric, the right ramus strongly spinose, the spines not grouped or bunched. Zenker's organ with 40–45 rosettes.

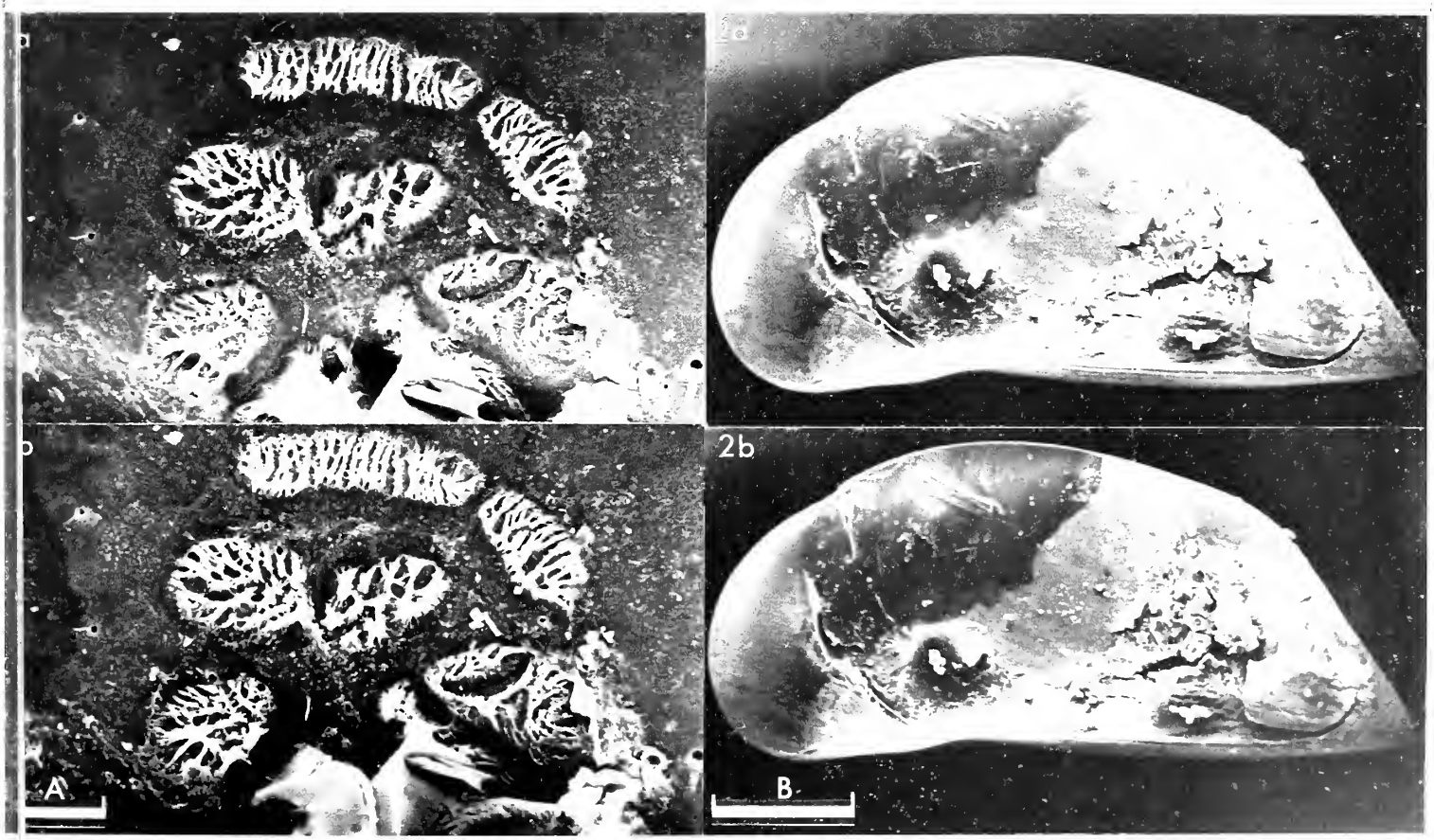
Remarks: Very few species approach *S. fernandoi* in size. *Stenocypris elongata* Daday, 1910 (5 mm, E Africa) differs in being lower in proportion to the length, in shape and in the four groups of hairs on the right furca. *Stenocypris cultrata* Müller, 1900 (3·9–4·7 mm, Africa) differs in shape, the anterior end being lower in lateral view, the posterodorsal margin steeper and with strong marginal hairs on each side of the posterior termination; the hairs on the right furcal ramus are markedly grouped. *Stenocypris biwasi* Deb, 1972 (4·3 mm, India) is much more elongate and has much better developed marginal hairs. *Stenocypris krishnakantai* Deb, 1972 (5·37 mm, India) lacks the marginal band of pore canals and is not a *Stenocypris* but probably a *Chrissia* Hartmann, 1957. *Stenocypris aldabrae* Müller, 1898 (2·9–3·5 mm, Aldabra, Indian Ocean) is generally closest but differs in the less acute posterior termination in lateral view and the much wider right furcal ramus, as well as in overall size.

Distribution: So far this species has only been found at the one locality where over 100 specimens were available for study.

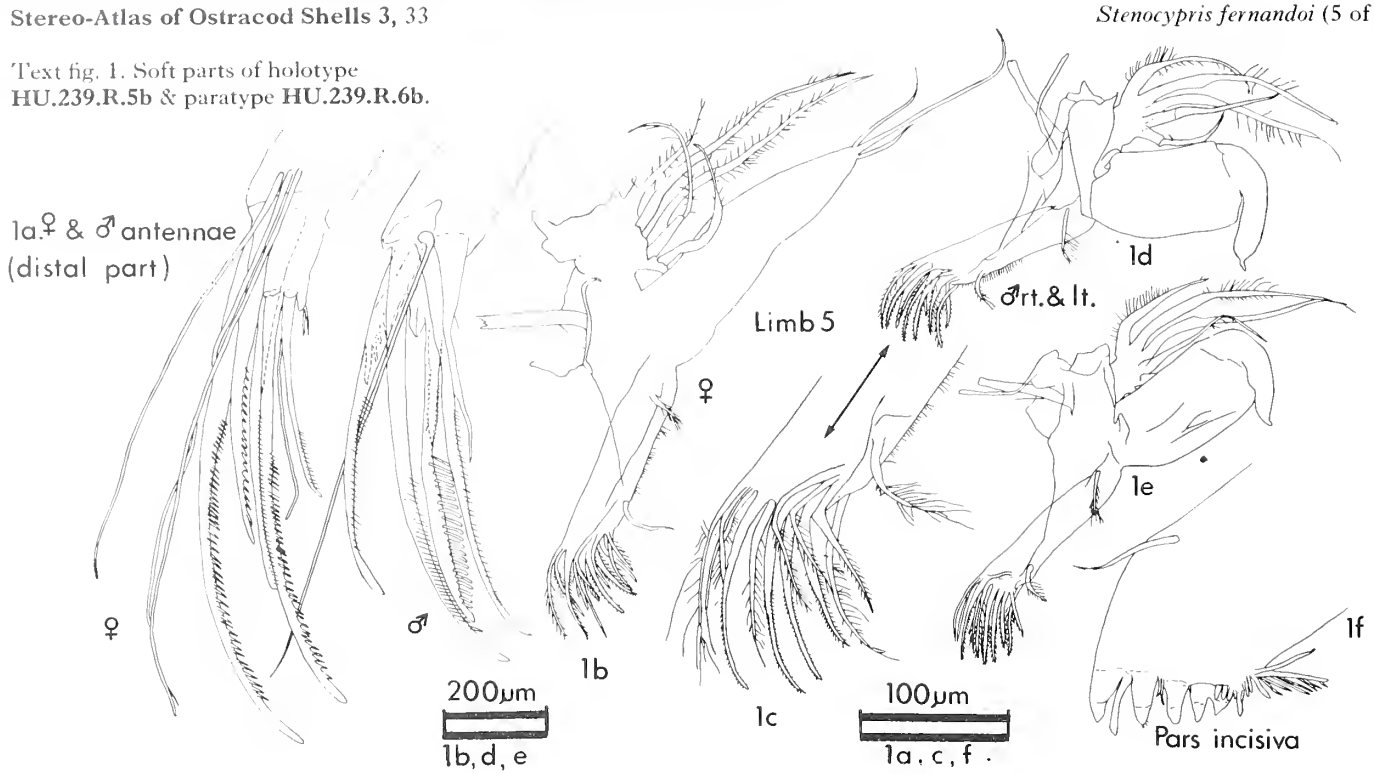
Explanation of Plate 3, 32

Figs. 1, 2, ♀ RV (holotype, **HU.239.R.5a**, 4920 μm long): fig. 1, int. musc. sc.; fig 2, int. lat.
Scale A (40 μm; × 330), fig. 1; scale B (1 mm; × 20), fig. 2.


a
2a
b
2b
A
B


a
2a
b
2b
A
B

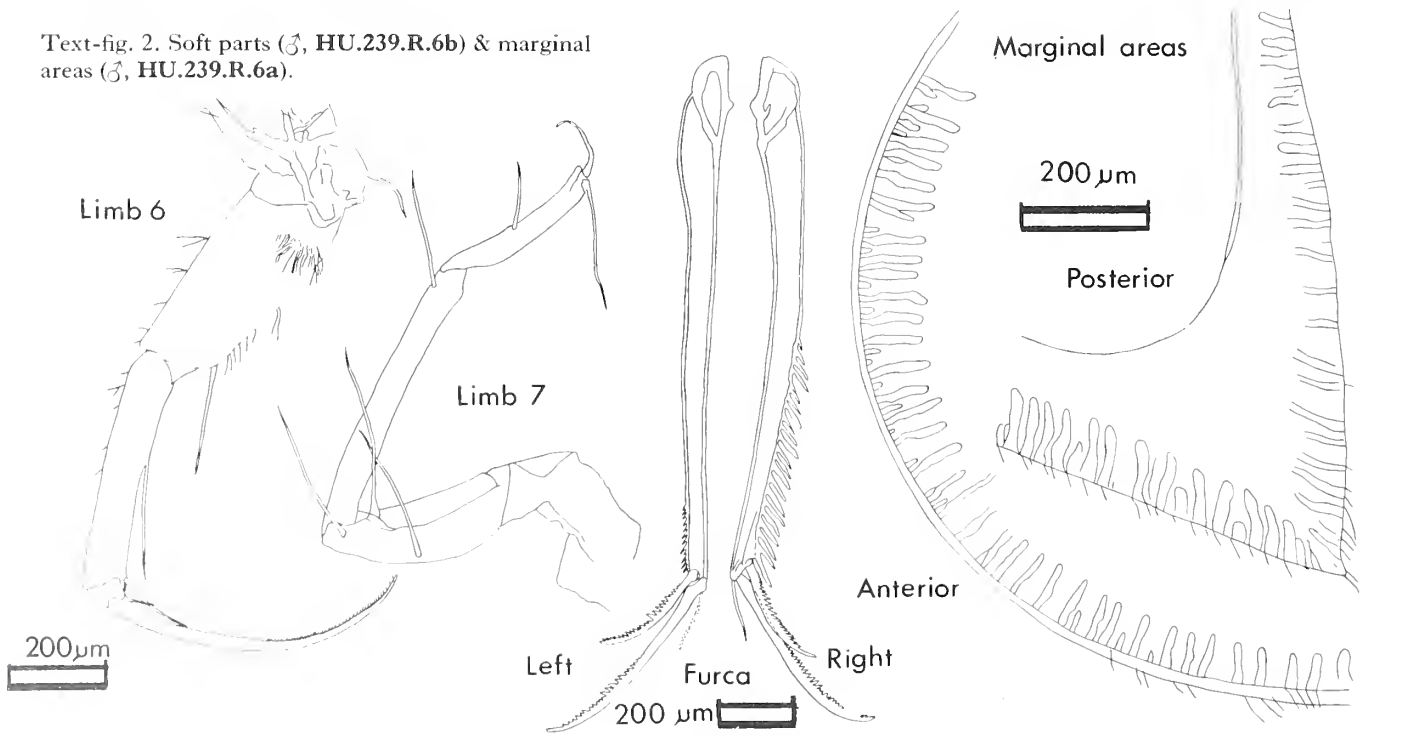
Text fig. 1. Soft parts of holotype **HU.239.R.5b** & paratype **HU.239.R.6b.**



Explanation of Plate 3, 34

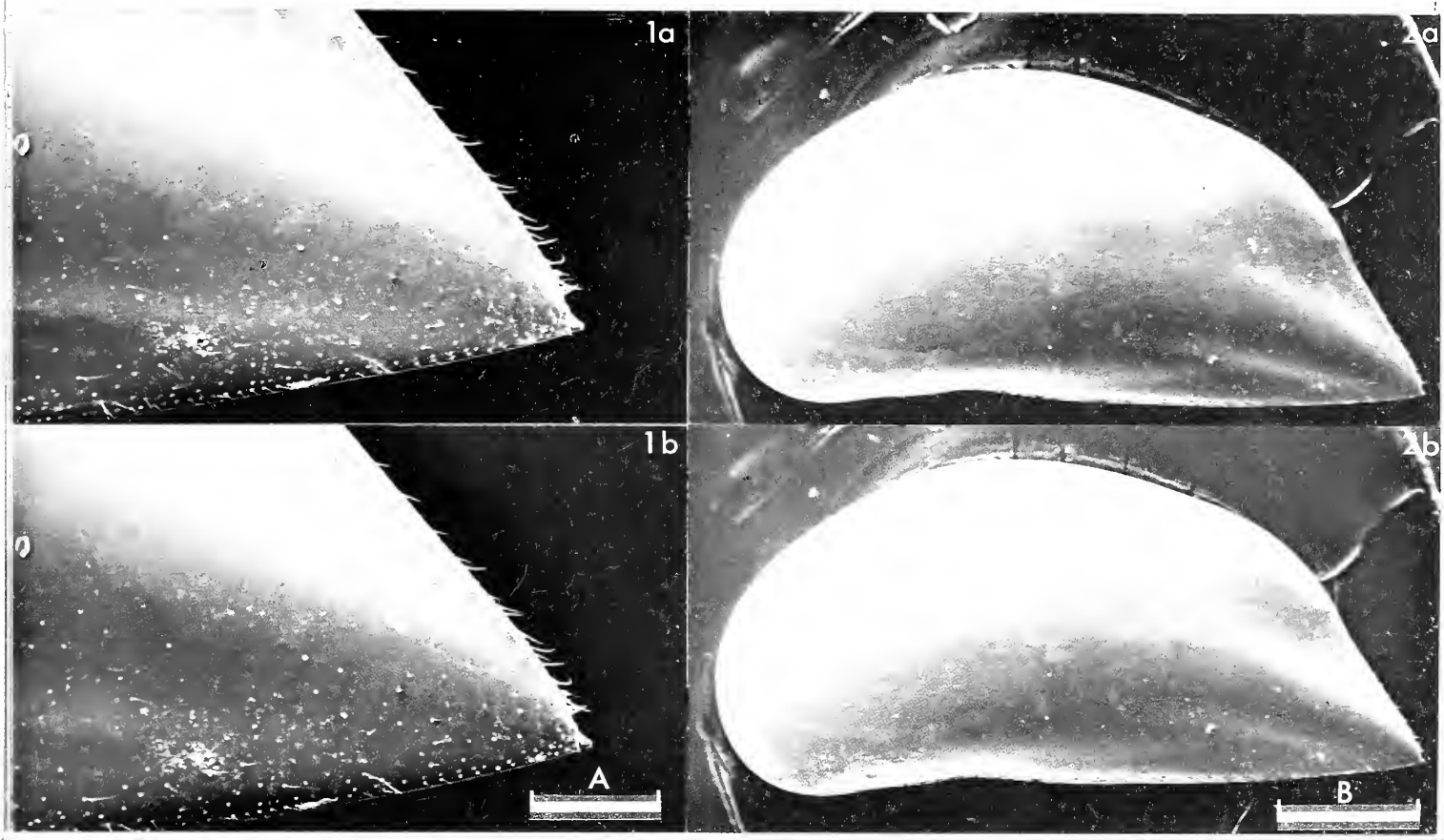
Figs. 1, 2, ♀ LV (holotype, **HU.239.R.5a**): fig. 1, ext. lat. post. termination; fig. 2, ext. lat.
Scale A (200 µm; × 90), fig. 1; scale B (1 mm; × 20), fig. 2.

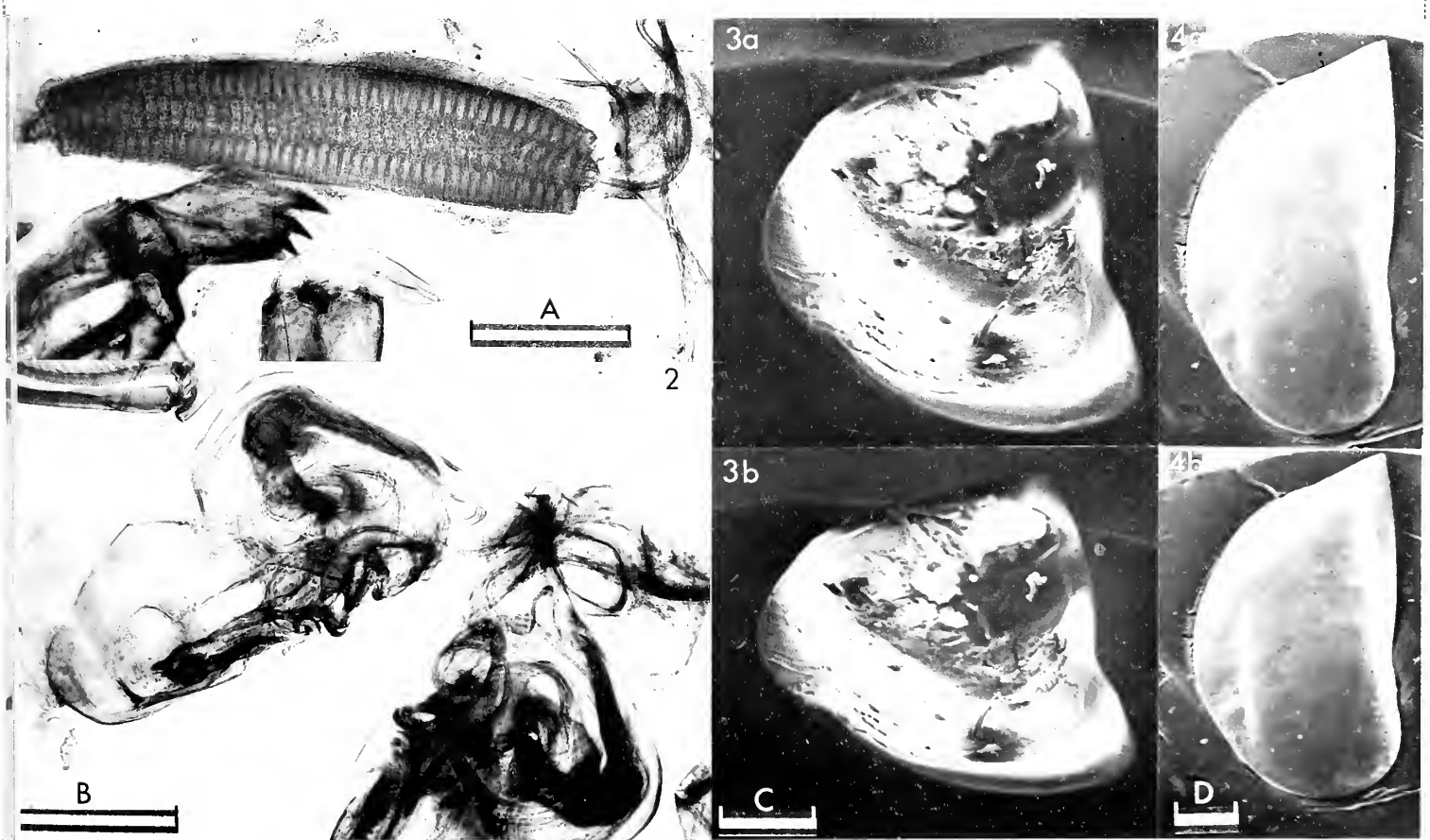
Text-fig. 2. Soft parts (♂, **HU.239.R.6b**) & marginal areas (♂, **HU.239.R.6a**).



Explanation of Plate 3, 36

Fig. 1, ♂, Zenker's organ (**HU.239.R.1b**); fig. 2, ♂, hemipene (**HU.239.R.8b**); fig. 3, ♀ RV, int. ant. obl. (holotype, **HU.239.R.5a**); fig. 4, ♀ LV, ext. ant. obl. (holotype, **HU.239.R.5a**).
Scale A (200 µm; × 113), fig. 1; scale B (200 µm; × 120), fig. 2; scale C (400 µm; × 33), fig. 3; Scale D (500 µm; × 18), fig. 4.


1a
2a
1b
2b
A
B


A
2
B
3a
3b
C
4a
4b
D

ON *ILYOCYPRIS TAPROBANENSIS* NEALE sp. nov.

by John W. Neale
(University of Hull, England)

Ilyocypris taprobanensis sp. nov.

Holotype: University of Hull coll. no. **HU.242.R.1,** ♀ LV, RV, limbs and soft parts.

Type locality: Estate pond in coconut plantation, Battuluoya, Sri Lanka; approx. lat. 7°42′N, long. 79°48′E.

Derivation of name: From the Latin *taprobane*, Ceylon.

Figured specimens: University of Hull coll. nos. **HU.242.R.1** (♀ LV, RV: Pl **3,** 38, figs. 1, 2; Pl. **3**, 38, figs. 1–3), **HU.242.R.2** (♂ LV, RV, limbs & soft parts: Text-fig. 1). All material from the type locality.

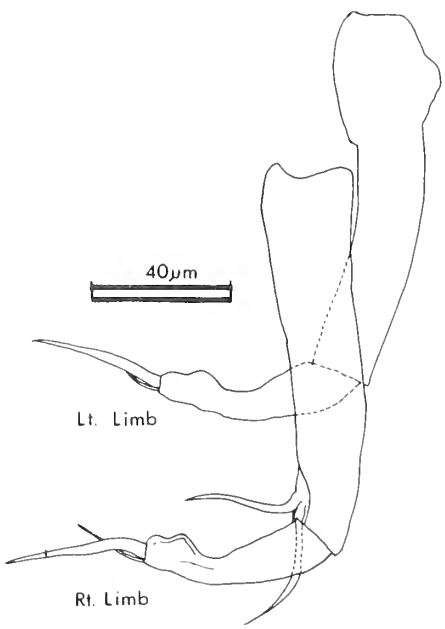
Diagnosis: Valves with variable spination, even between left and right valves of same individual. Small peripheral spines, about 12 anteriorly, ten posteriorly, with larger tubercles or blunt spines inside them anteriorly and posteriorly. Of the latter the posteroventral, anteroventral and anteromedian are the most consistent. Furca with very slender claws.

Explanation of Plate 3, 38

Figs. 1, 2, ♀ (holotype, **HU.242.R.1**, 727 μm long): fig. 1, RV, ext. lat.; fig. 2, LV, ext. lat.
Scale A (100 μm; × 135), figs. 1, 2.

Remarks: *I. taprobanensis* is unlikely to be confused with other *Ilyocypris* species on the basis of shell form. It is not close to species of the genus whose limbs and soft parts are known although the furcal claws resemble those of *Ilyocypris divisa* Klie in their slenderness. From that species it is easily differentiated by the form of the male clasping limbs (fifth pair of limbs) and the broader, proximal expansion of the furcal ramus.

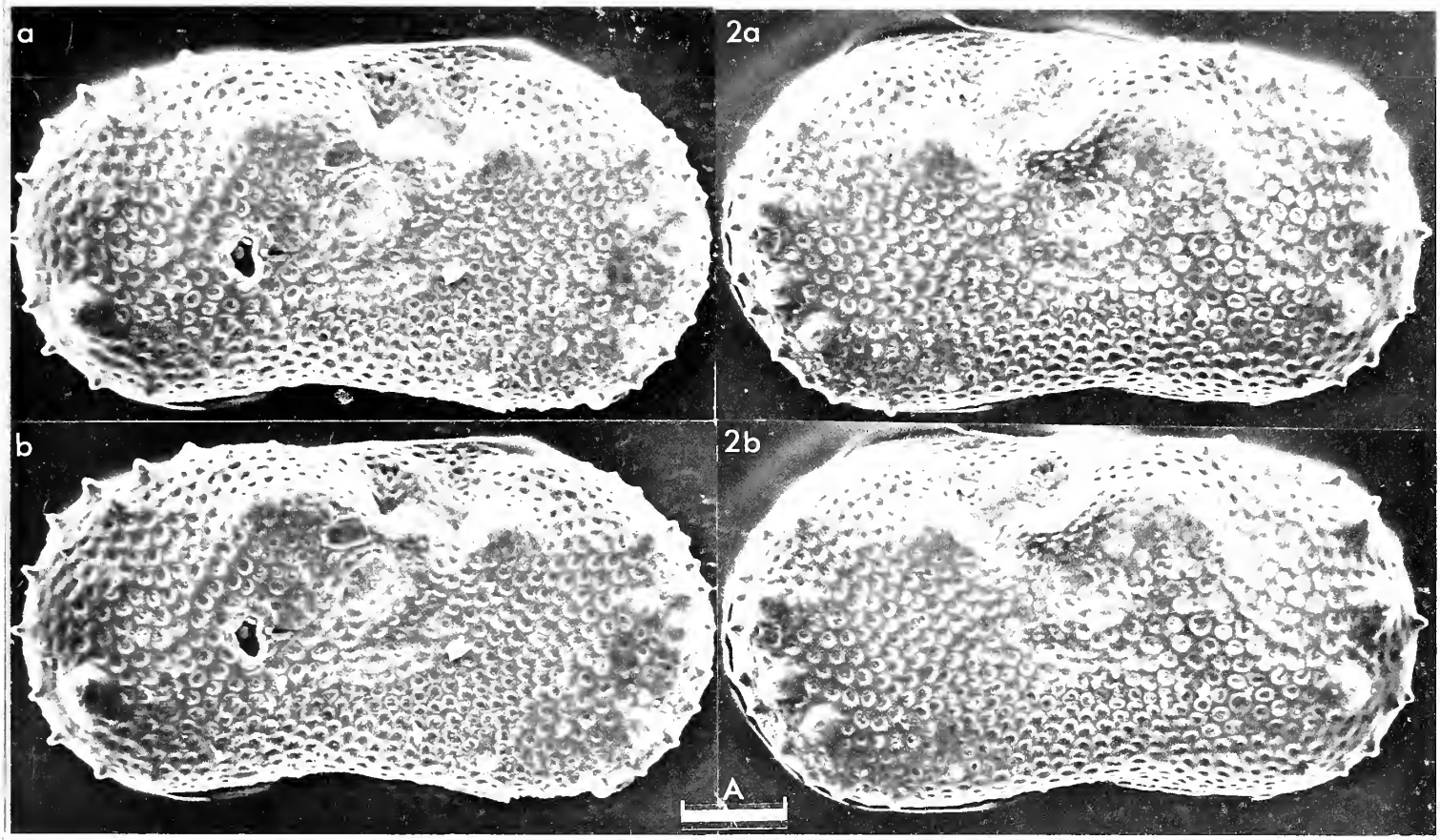
Distribution: So far this species is only known from the Battuluoya area of western Sri Lanka.

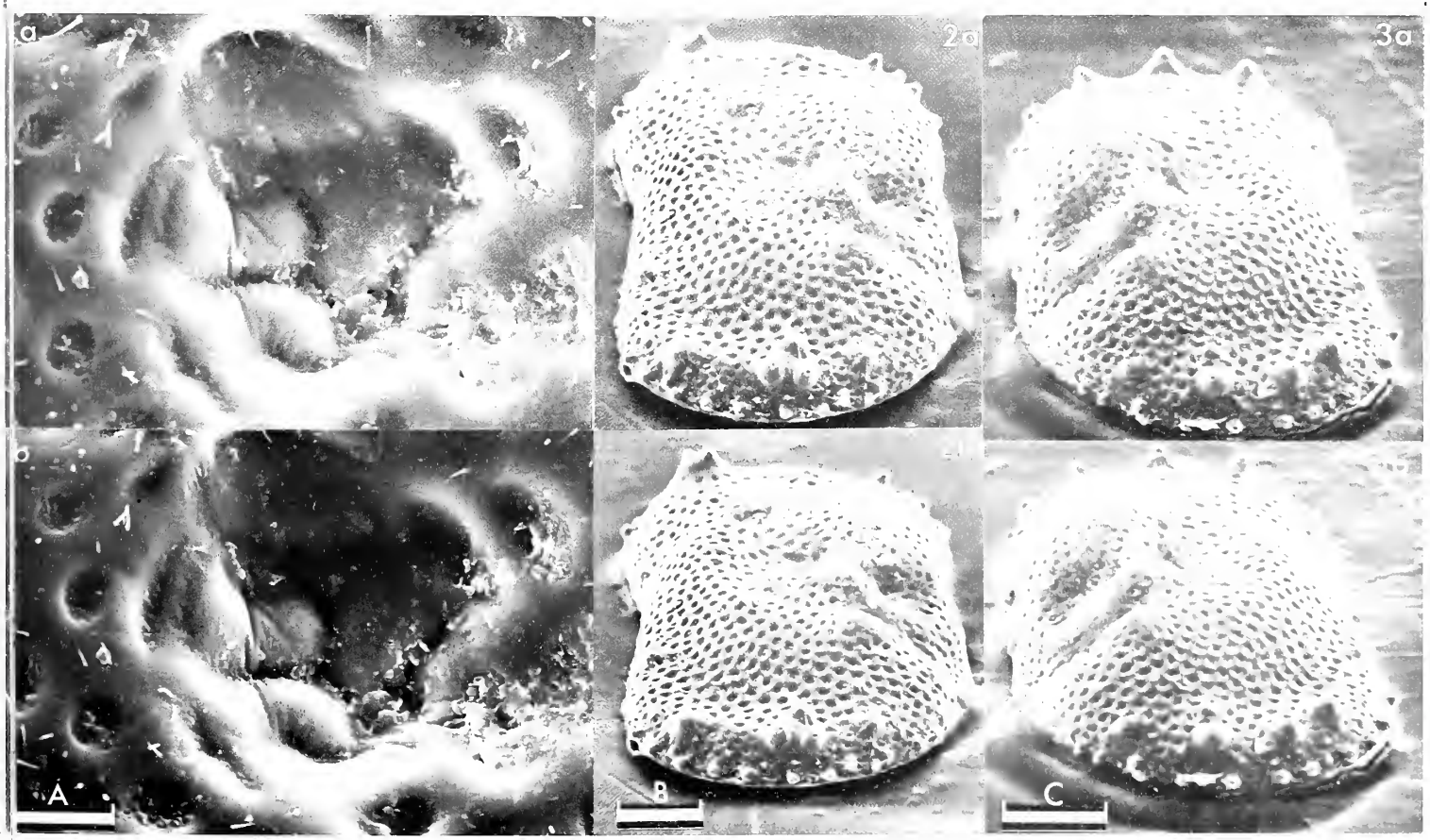


Text-fig. 1. ♂ fifth limbs (**HU.242.R.2**).

Explanation of Plate 3, 40

Figs. 1–3, ♀ (holotype, **HU.242.R.1**): fig. 1, LV, ext. lat., musc. sc.; fig. 2, RV, ant. obl.; fig. 3, LV, ant. obl.
Scale A (20 μm; × 750), fig. 1; scale B (100 μm; × 129), fig. 2; scale C (100 μm; × 137), fig. 3.


a
2a
b
2b
A


a
2a
3a
b
A
B
C

595.337.14 (119.9) (265.1: 164.090.02): 551.351 (24.08.80)

ON *RADIMELLA DICTYON* POKORNÝ

by Richard H. Benson
(*Smithsonian Institution, Washington, D.C., U.S.A.*)

Genus *RADIMELLA* Pokorný, 1968

Type-species (by original designation): *Radimella dictyon* Pokorný, 1968.

Diagnosis: A robustly ornate hemicytherine with distinctive reticular pattern; three frontal, divided adductor scars; amphidont hinge with ventrally incised posterior tooth and auxiliary denticles. Three parallel ridges of reticulum extending from muscle node forward; diagonal ridges forming posterodorsal loop with median ridges that become less well organized toward posterior (see Text-fig. 3).

Radimella dictyon Pokorný, 1968

1968 *Radimella dictyon* sp. nov. V. Pokorný, *Acta Univ. Carolinae geol.* 1968, 365–368, text-figs. 1–6.
1969 *Radimella dictyon* Pokorný; V. Pokorný, *Acta Univ. Carolinae geol.* 1969, 296, pl. 1, fig. 1, pl. 4, fig. 2.

Holotype: U.S.N.M. coll. no. **122091**, RV.

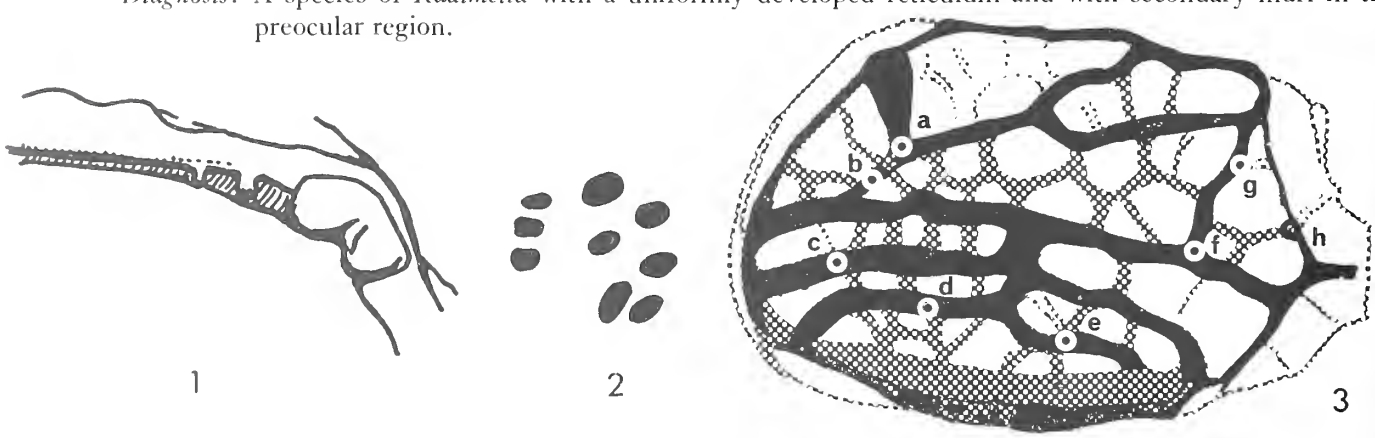
Explanation of Plate 3, 42

Figs. 1, 2, LV (**122112,** 700 μm long): fig. 1, ext. lat.; fig. 2, int. lat.
Scale A (250 μm; × 130), figs. 1, 2.

Type locality: Galápagos Islands; N of Isla Española (Hood Island); Albatross station no. 2813, lat. 01°1′S, long. 89°40′W, depth 40 fathoms, surface temperature 81°F.

Figured specimens: U.S.N.M. coll. no. **122112** (LV: Pl. **3**, 42, figs 1, 2; Pl. **3**, 44, figs. 2, 3) and **122091** (RV: Pl. **3**, **44**, fig. 1). Both Recent from type locality.

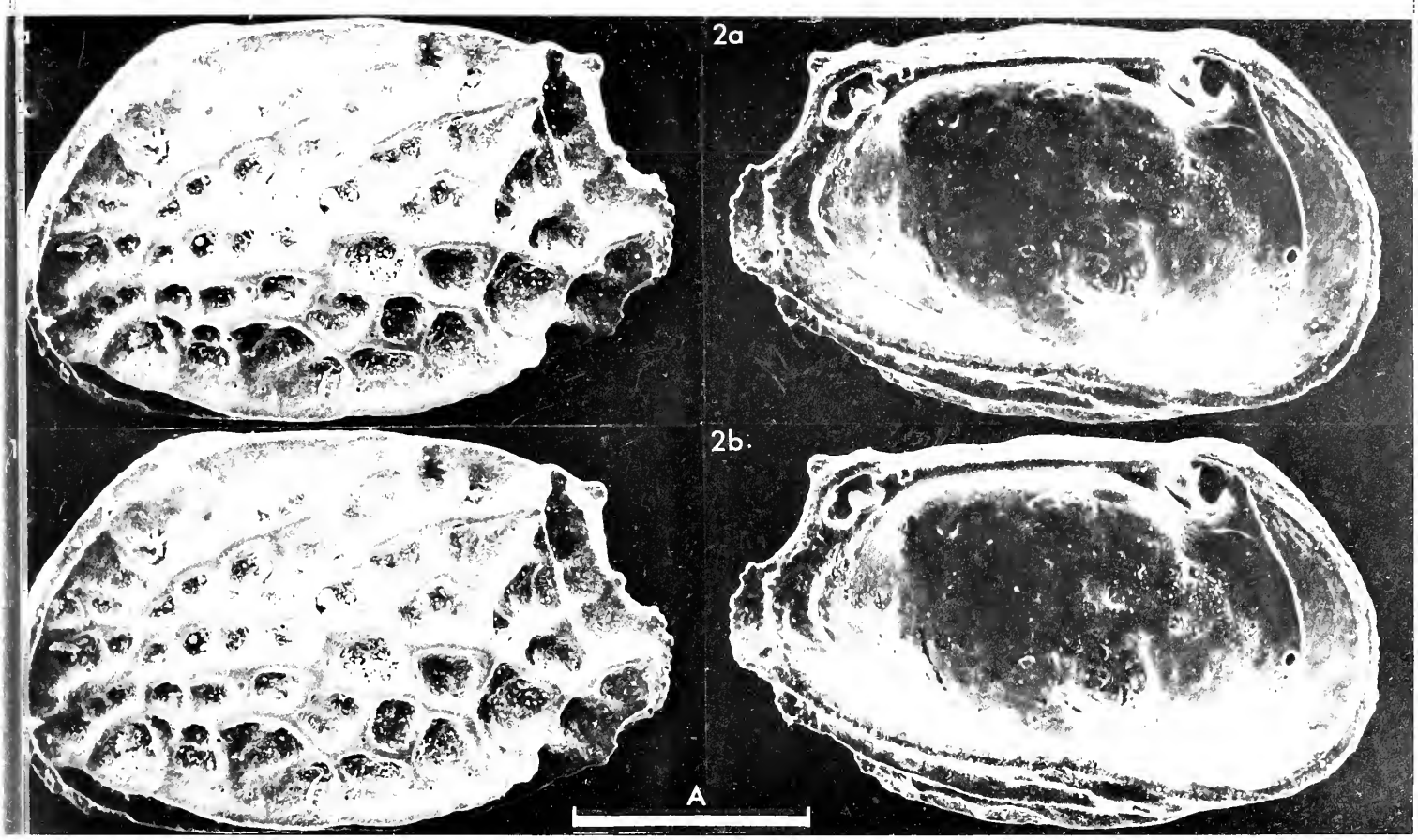
Diagnosis: A species of *Radimella* with a uniformly developed reticulum and with secondary muri in the preocular region.

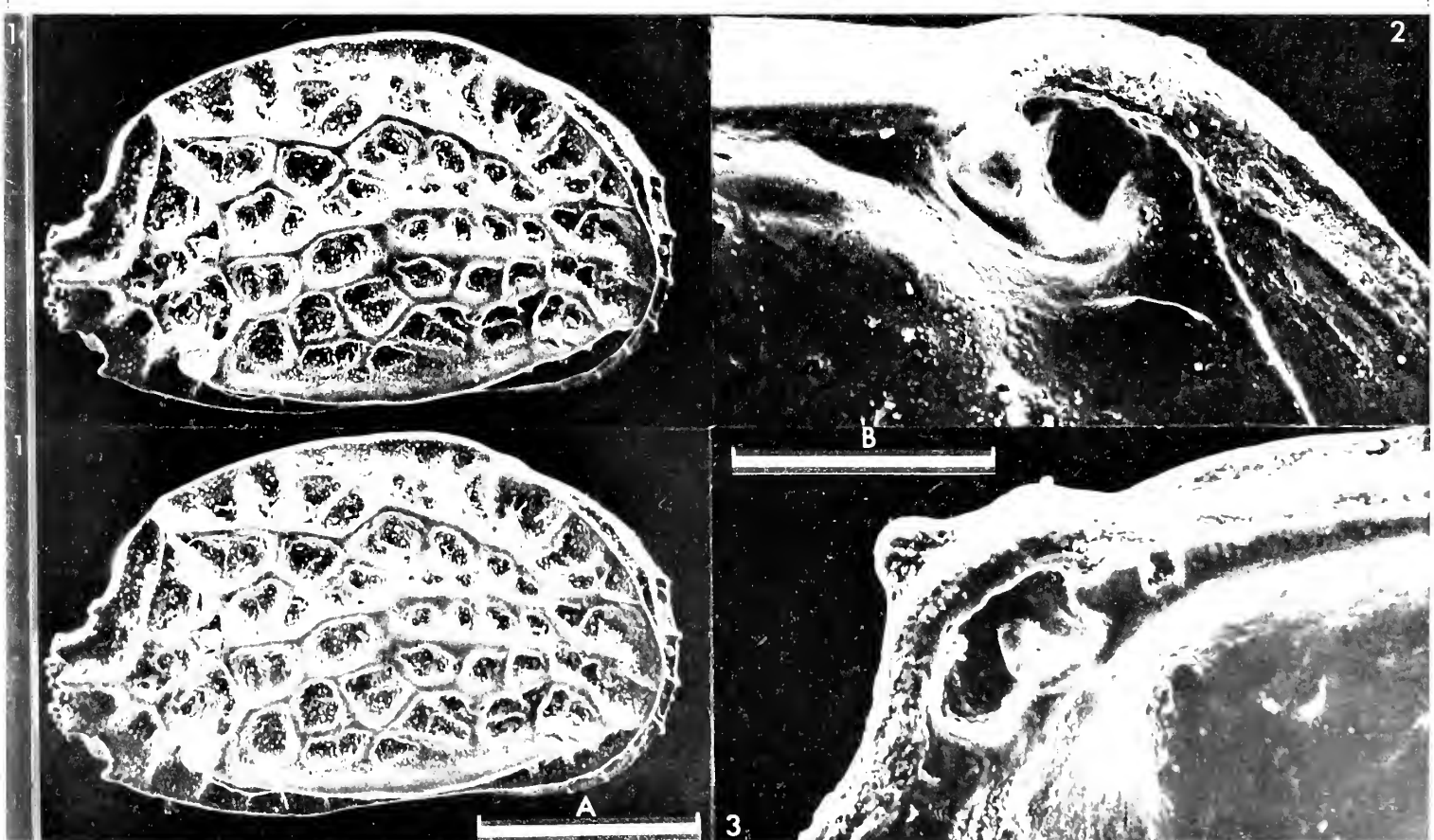


Text-figs. 1–3. *R. dictyon.* 1, post. element RV hinge, × 200; 2, adductor musc. sc. pattern, × 200; 3, LV reticular diagram (modified after Pokorný 1968) with homologous series of pore conuli (a–h), × 120.

Explanation of Plate 3, 44

Fig. 1, RV, ext. lat. (holotype, **122091**, 730 μm long); fig. 2, LV ant. hinge, int. lat. (**122112**); fig. 3, LV post. hinge, int. lat. (**122112**).
Scale A (250 μm; × 120), fig. 1; scale B (100 μm; × 360), figs. 2, 3.


2a
2b
A


1
2
B
A
3

595.337.14 (119.9) (265.1 : 164.090.02) : 551.351 (24.08.80)

ON *RADIMELLA DARWINI* POKORNÝ

by Richard H. Benson
(*Smithsonian Institution, Washington, D.C., U.S.A.*)

Radimella darwini Pokorný, 1969

1969 *Radimella darwini darwini* subsp. nov. V. Pokorný, *Acta Univ. Carolinae geol.* 1969, 297–299, pl. 1, fig. 2, text-figs. 1 a–d, 3, 12.
1969 *Radimella darwini dictyonoides* subsp. nov. V. Pokorný, *ibid.*, 299–301, pl. 2, fig. 2, text-figs. 5, 6, 10, 11.

Holotype: U.S.N.M. coll. no. **122097**.

Type locality: Galápagos Islands; N of Isla Española (Hood Island); lat. 01°1′S, long. 89°40′W. Recent, Albatross station no. 2813, depth 40 fathoms, surface temperature 81°F.

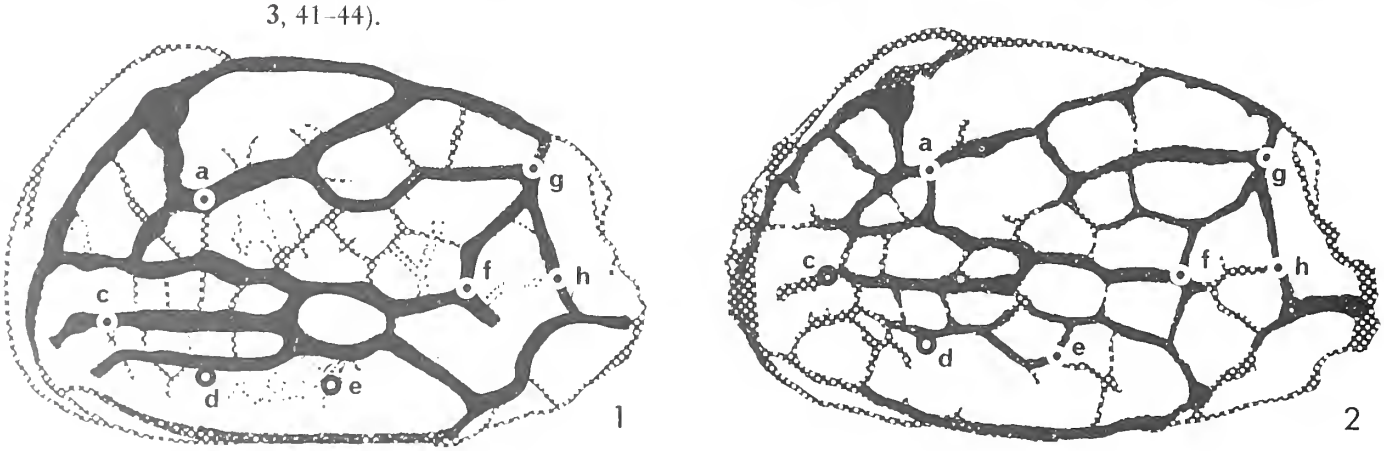
Figured specimens: U.S.N.M. coll. nos. **122097** (LV: Pl. **3**, 46, figs. 1, 2), **122098** (LV, holotype of *R. darwini dictyonoides*: Pl. **3**, 48, figs. 1, 2). **122097** from type locality. **122098** from Galápagos Islands, Anton Bruun Cruise 18B, station 791G (lat. 00°27′S, long. 90°21′W; Recent), depth 100 m.

Diagnosis: Strong difference between primary and secondary ridge systems of reticulum.

Explanation of Plate 3, 46

Figs. 1, 2, *Radimella darwini darwini*, LV (holotype, **122097**, 750 μm long): fig. 1, ext. lat.; fig. 2, int. lat.
Scale A (250 μm; × 120), figs. 1, 2.

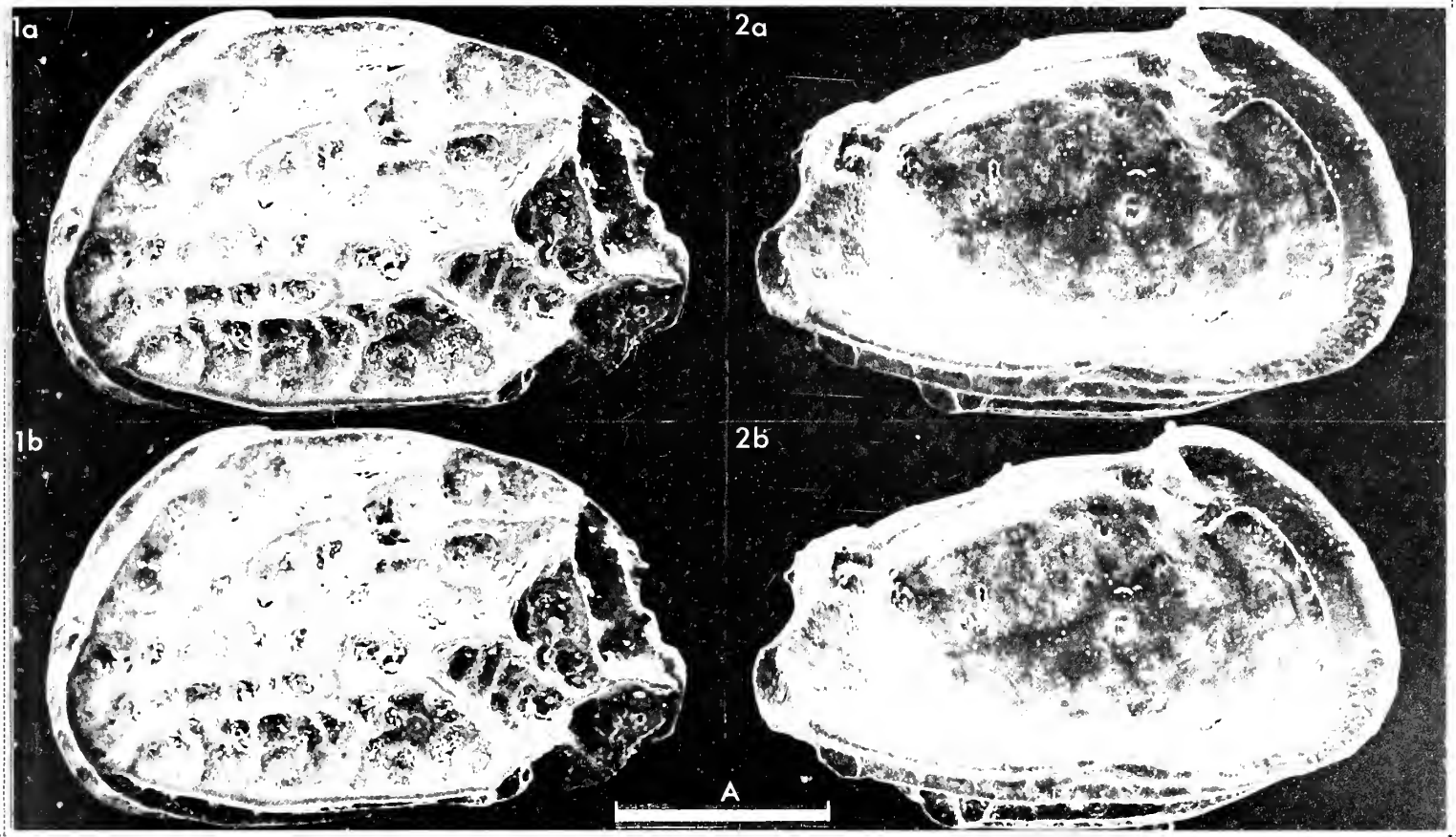
Remarks: Pokorný (op. cit.) recognized two subspecies, *R. darwini darwini* (Pl. **3**, 46 and Text-fig. 1) and *R. darwini dictyonoides* (Pl. **3**, 48 and Text-fig. 2) differing in strength of the secondary ridge systems, with the latter subspecies approaching *R. dictyon* Pokorný (see *Stereo-Atlas of Ostracod Shells* **3**, 41–44).

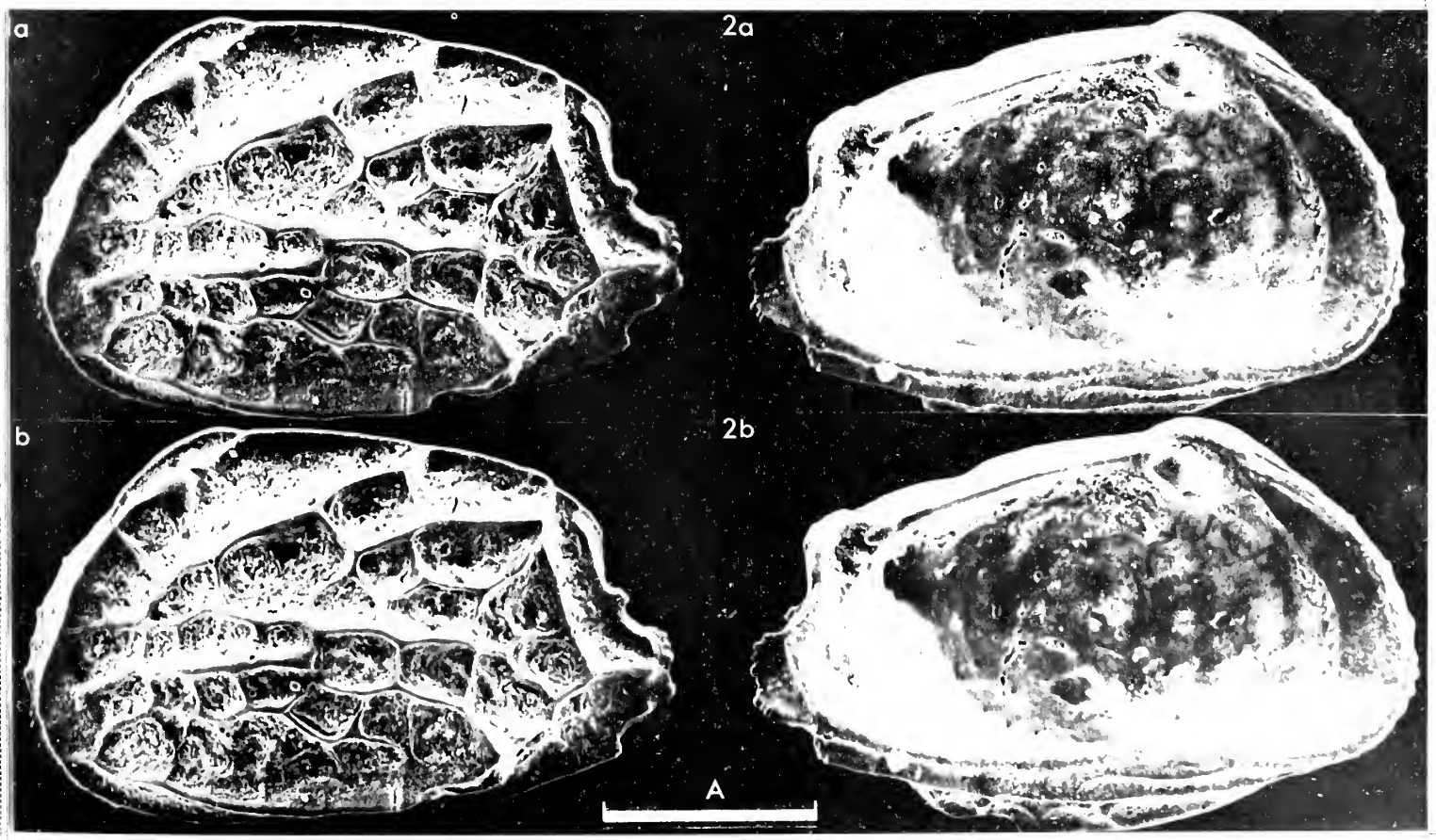


Text-figs. 1, 2. Reticular diagrams of *R. darwini darwini* (fig. 1) and *R. darwini dictyonoides* (fig. 2) after Pokorný (op. cit.), × 80; a–h, homologous series of pore conuli.

Explanation of Plate 3, 48

Figs. 1, 2, *Radimella darwini dictyonoides*, LV (holotype, **122098**, 770 μm long): fig. 1, ext. lat.; fig. 2, int. lat.
Scale A (250 μm; × 117), figs. 1, 2.


1a
2a
1b
2b
A


a
2a
b
2b
A

595.337.14 (118.21/118.22) (756:162.079.34): 551.35 + 552.542

ON *RADIMELLA CONFRAGOSA* (EDWARDS)

by Richard H. Benson
(*Smithsonian Institution, Washington, D.C., U.S.A.*)

Radimella confragosa (Edwards, 1944)

1944 *Hemicythere confragosa* sp. nov. R. A. Edwards, *J. Paleont.* **18,** 518, pl. 86, figs. 23–26.
1971 *Radimella confragosa* (Edwards); J. E. Hazel, *Prof. Pap. U.S. geol. Surv.* **704,** 6.

Holotype: U.S.N.M. coll. no. **559423**, ♀ car.

Type locality: Miocene Duplin, pit on N side of Lumber River and W side of U.S. highway no. 74, SE of Lumberton, North Carolina; lat. 34°37′N, long. 79°00′W.

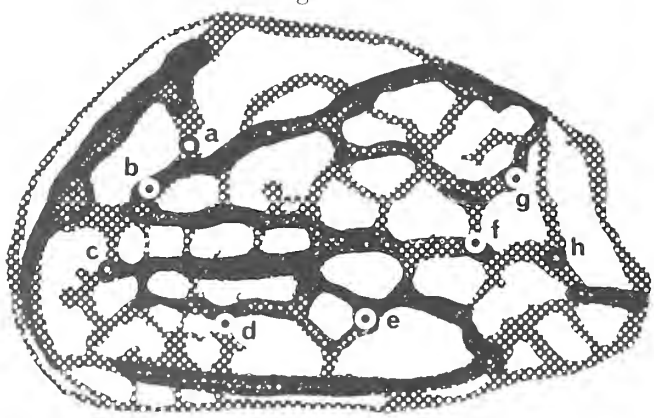
Figured specimens: U.S.N.M. coll. nos. **559423** (♀ car.: Pl. **3**, 50, figs. 1, 2; Pl. **3**, 52, figs. 3, 4), **172675** (♀ LV: Pl. **3**, 52, figs. 1, 2). **172675** from Yorktown Formation, an open pit phosphate mine of the Texas Gulf Sulphur Co., near Aurora, Beaufort County, North Carolina; Lower Pliocene; lat. 35°20′N, long. 76°45′W.

Explanation of Plate 3, 50

Figs. 1, 2, ♀ car. (holotype, **559423**, 580 μm long): fig. 1, LV, ext. lat.; fig. 2, RV, int. lat.
Scale A (200 μm; × 155), figs. 1, 2.

Diagnosis: A species of *Radimella* with massive muri and the posterodorsal loop coincident with the dorsal margin.

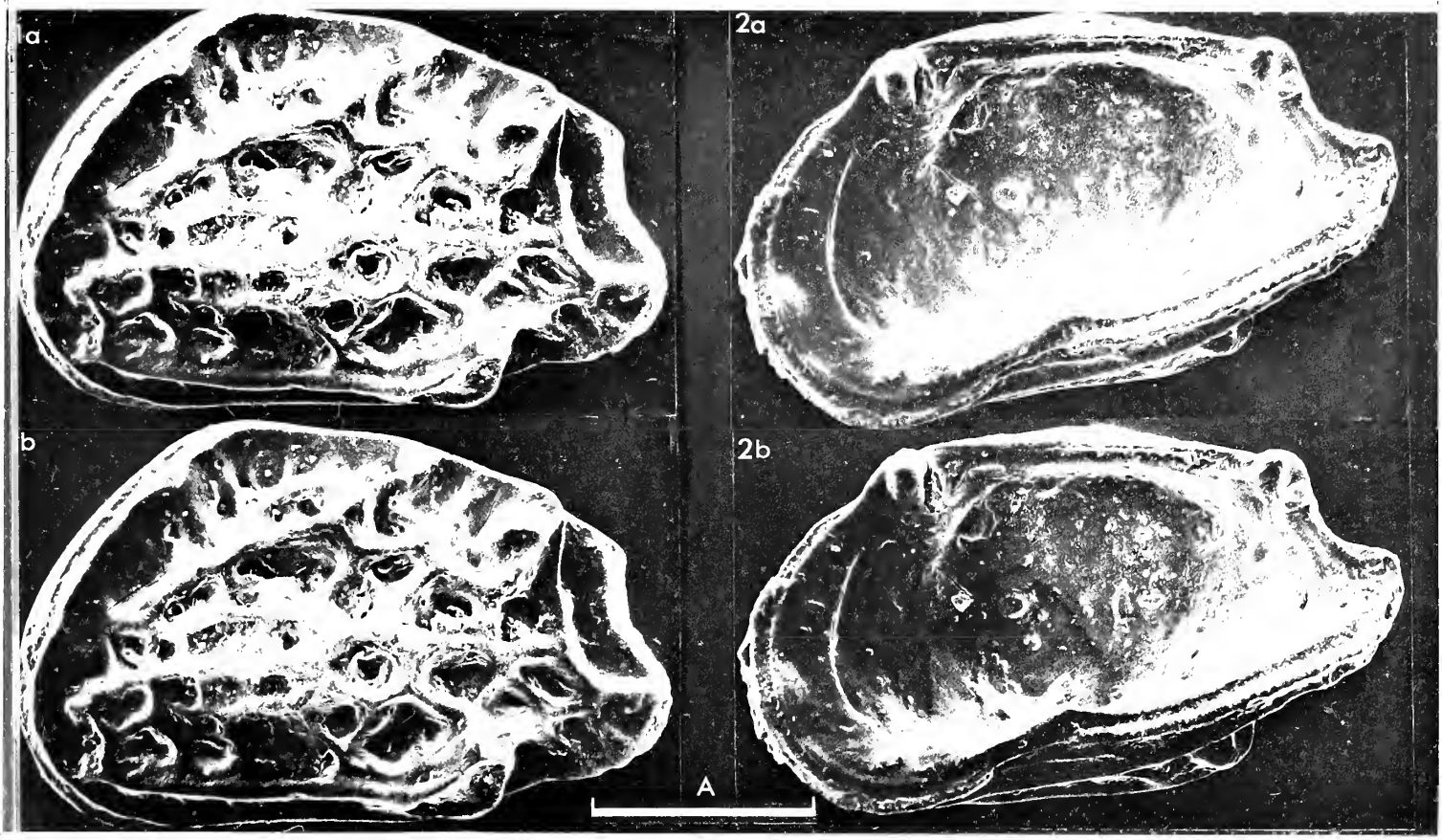
Remarks: Similar to *Radimella ponderosa* Pokorný, 1967 (Recent; Galápagos Islands), whose posterodorsal loop is detached from the dorsal margin.



Text-fig. 1. Reticular diagram; a–h, homologous series of pore conuli, × 150.

Explanation of Plate 3, 52

Figs. 1, 2, ♀ LV (**172675**, 570 μm long): fig. 1, ext. lat.; fig. 2, subcentral tubercle, ext. lat. Figs. 3, 4, ♀ car. (holotype, **559423**): fig. 3, RV int. lat., post. hinge element; fig. 4, RV int. lat., ant. hinge element.
Scale A (250 μm; × 135), fig. 1; scale B (100 μm; × 400), fig. 2; scale C (50 μm; × 500), figs. 3, 4.


1a
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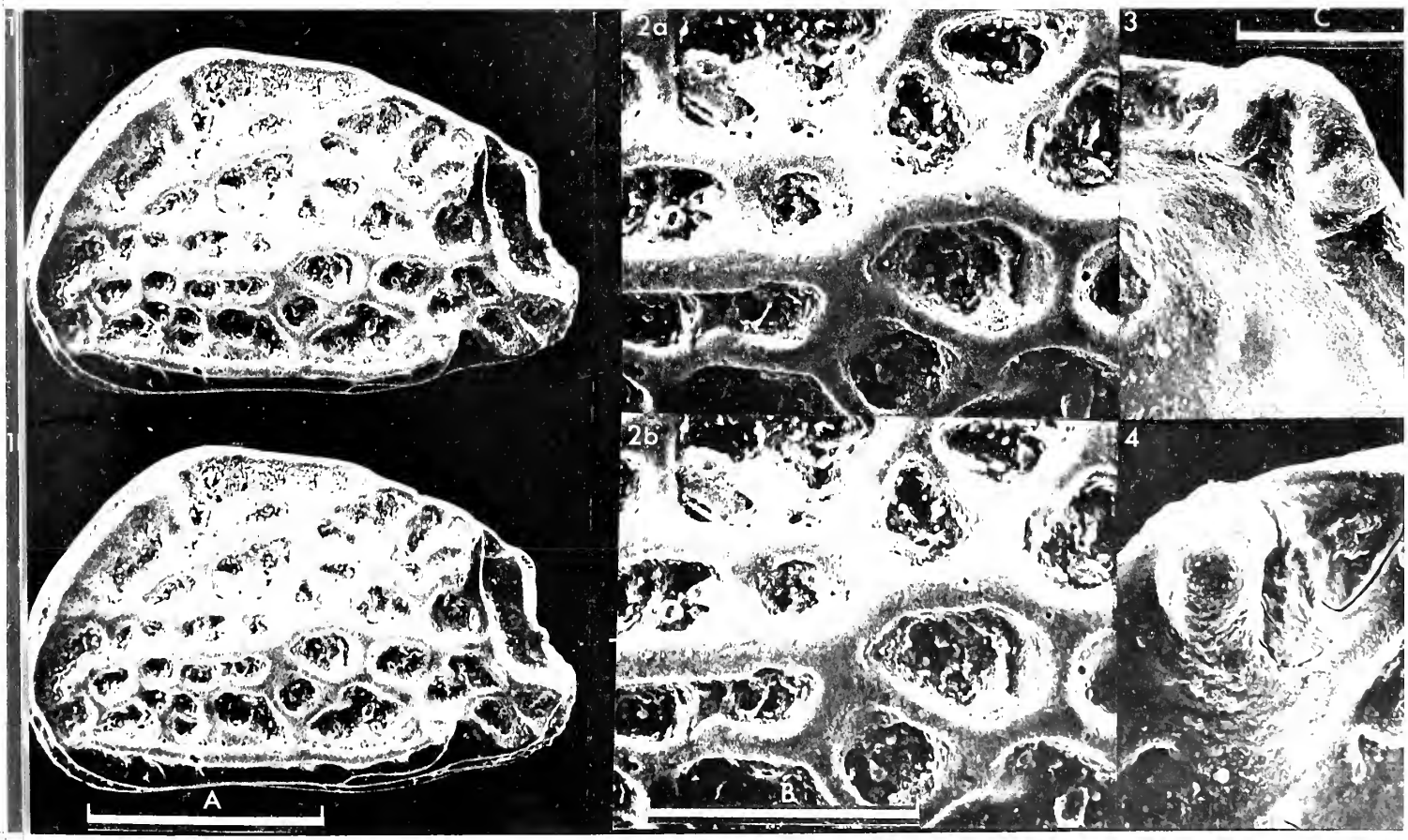
b
2b
A


1
2a
3
C
1
2b
4
A
B

595.337.14 (119.9) (265.22:162.117.38 + 265.22:162.118.32):551.351 (24.08.30)

ON *RADIMELLA? AURITA* (SKOGSBERG)

by Richard H. Benson
(*Smithsonian Institution, Washington, D.C., U.S.A.*)

Radimella? aurita (Skogsberg, 1928)

1928 *Cythereis* (*Cythereis*) *aurita* sp. nov. T. Skogsberg, *Occ. Pap. Calif. Acad. Sci.* **15**, 120–126, pl. 6, figs. 5, 6, text-fig. 21.
1959 *Bradleya aurita* (Skogsberg); R. H. Benson, *Paleont. Contr. Univ. Kans. Arthr.* **1**, 63, pl. 6, figs. 2a–c, pl. 11, fig. 4.
1972 *Radimella? aurita* (Skogsberg); R. H. Benson, *Smithsonian Contrib. Paleobiol.* **12**, 33.

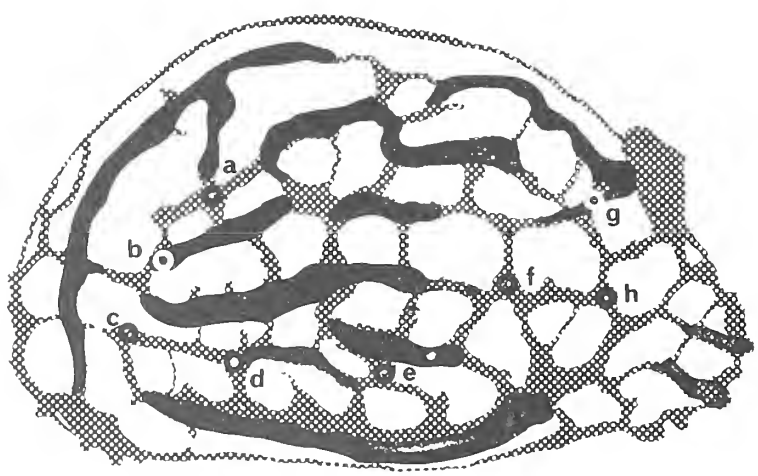
Syntypes: U.S.N.M. coll. no. **127411**.

Type locality: Pacific Grove, California, just outside Hopkins Marine Station, in a tide pool; lat. 36°37′N, long. 121°54′W. Recent.

Figured specimens: U.S.N.M. coll. nos. **190450** (♀ LV: Pl **3**, 54, figs. 1, 3), **190446** (♀ RV: Pl. **3**, 54, fig. 2), **190106** (♀ car.: Pl. **3**, 56, figs. 1–3). **190450** and **190446** both Recent from Todos Santos Bay, Baja California, Mexico; lat. 38°41′N, long. 116°40′W, 15 fathoms. **190106** Recent from Bird Rock (beach wash), La Jolla, California; lat. 32°51′N, long. 117°16′W.

Explanation of Plate 3, 54

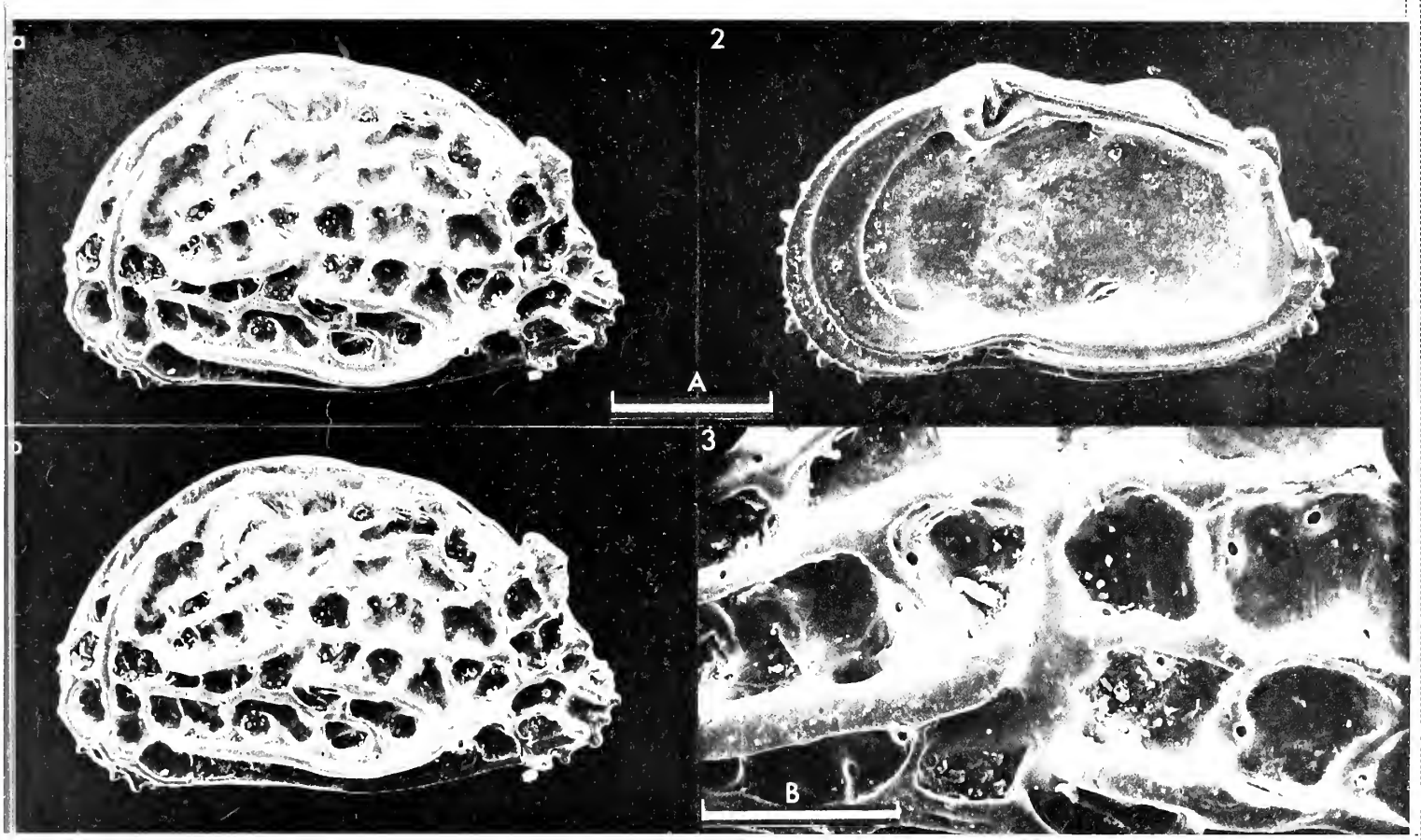
Fig. 1, ♀ LV, ext. lat. (**190450**, 860 μm long); fig. 2, ♀ RV, int. lat. (**190446**, 840 μm long); fig. 3, ♀ LV, ext. lat., subcentral tubercle (**190450**).
Scale A (250 μm; × 92), figs. 1, 2; scale B (100 μm; × 275), fig. 3.



Text-fig. 1. Reticular diagram; a–h, homologous series of pore conuli.

Explanation of Plate 3, 56

Figs. 1–3, ♀ car. (**190106**, 780 μm long): fig. 1, ext. lt. lat.; fig. 2, pore with sieve plate; fig. 3, disjunctive mural pore.
Scale A (250 μm; × 92), fig. 1; scale B (5 μm; × 5000), figs. 2, 3.


2
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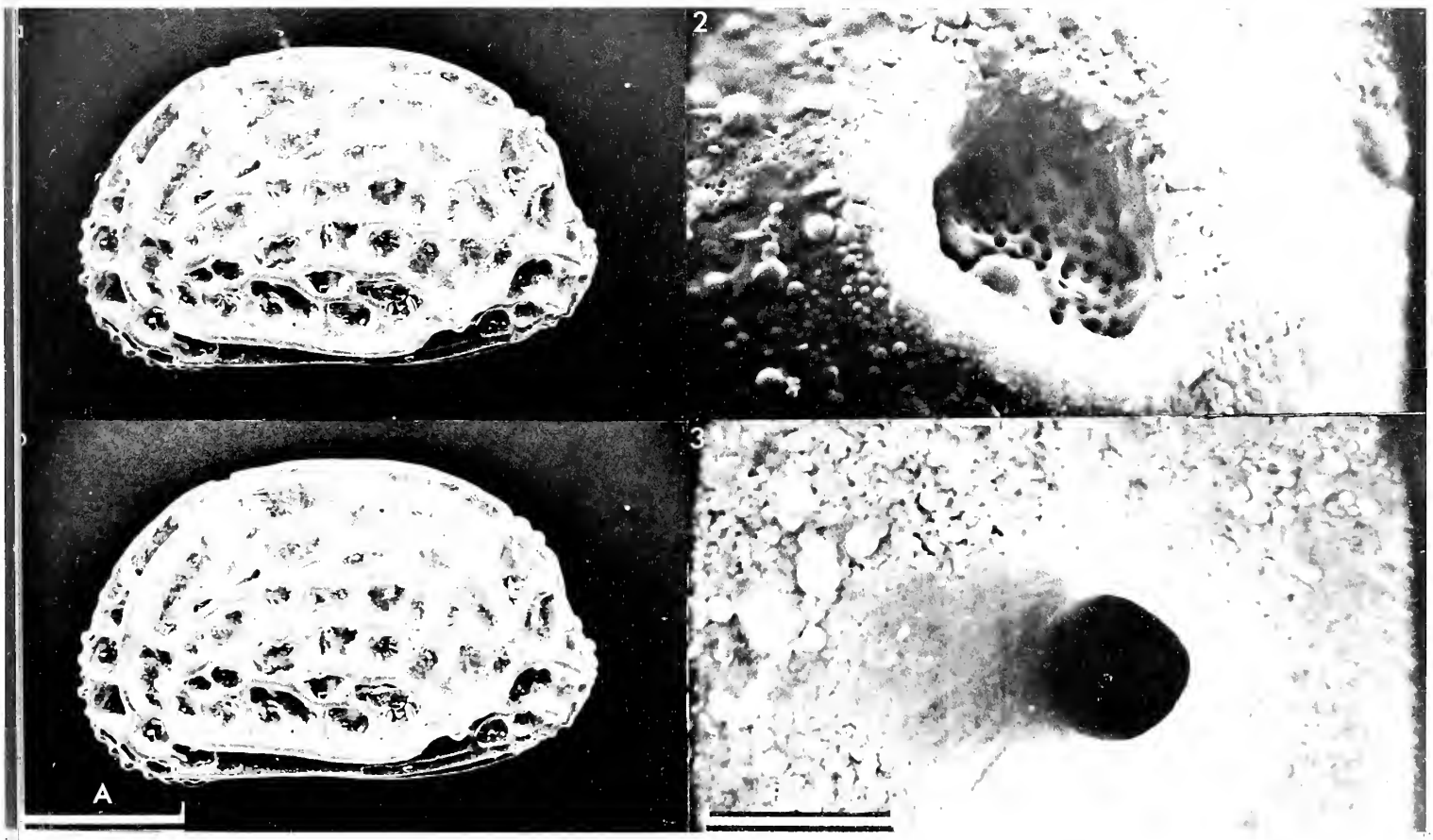

2
A
3

595.337.14 (119.9) (261.48:162.077.33 + 261.48:162.079.32):551.351

ON *RADIMELLA? FLORIDANA* (BENSON & COLEMAN)

by Richard H. Benson
(*Smithsonian Institution, Washington, D.C., U.S.A.*)

Radimella? floridana (Benson & Coleman, 1963)

1963 *Aurila conradi floridana* subsp. nov. R. H. Benson & G. L. Coleman, *Paleont. Contr. Univ. Kans. Arthr.* **2**, 35, 36, pl. 8, figs. 10–12, text-fig. 21.
?1965 *Aurila conradi littorala* subsp. nov. S. Grossman, *Micropaleontology* **11**, 143–146, pl. 1, figs. 1–11.
1966 *Aurila conradi floridana* Benson & Coleman; R. H. Benson, *J. Paleont.* **40**, 746.
1971 *Aurila floridana* Benson & Coleman; P. C. Valentine, *Prof. Pap. U.S. geol. Surv.* **683-D**, tab. 1, pl. 7, figs. 43–47.

Lectotype: U.S.N.M. coll. no. **113202**; designated Benson 1966, op. cit.

Type locality: Western end of Florida Bay in waters about 4 fathoms deep. Lat. 24°55′N, long. 80°55′W.

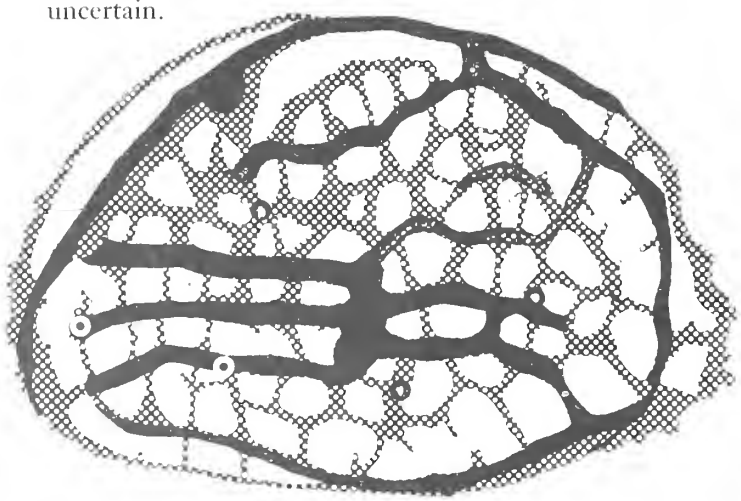
Figured specimens: U.S.N.M. coll. nos. **172654** (♀ LV: Pl. **3**, 58, figs. 1–4), **190513** (♀ RV: Pl. **3**, 60, figs. 1–3). **172654** Recent from Gosnold station 1845 (shelf off Onslow Bay, lat. 33°59·5′N, long. 76°29·3′W, depth 41 m); **190513** Recent from Gosnold station 1474 (shelf off South Carolina, lat. 32°49·3′N, long. 78°44·4′W, depth 32 m).

Explanation of Plate 3, 58

Figs. 1–4, ♀ LV (**172654**; 700 μm long); fig. 1, ext. lat.; fig. 2, ext. lat., subcentral tubercle; fig. 3, disjunctive mural pore; fig. 4, pore with sieve plate.
Scale A (250 μm; × 115), fig. 1; scale B (100 μm; × 350), fig. 2; scale C (5 μm; × 5000), figs. 3, 4.

Diagnosis: Possibly a species of *Radimella* with the fossae divided by secondary reticulation and an inner posterior rim developed just in from the margin extending from the ventrolateral ridge.

Remarks: Probably conspecific with *Aurila conradi littorala* Grossman, 1965, from the Recent of Radfish Bay, Texas coast, though doubt about the reticular pattern of that form makes absolute assignment uncertain.

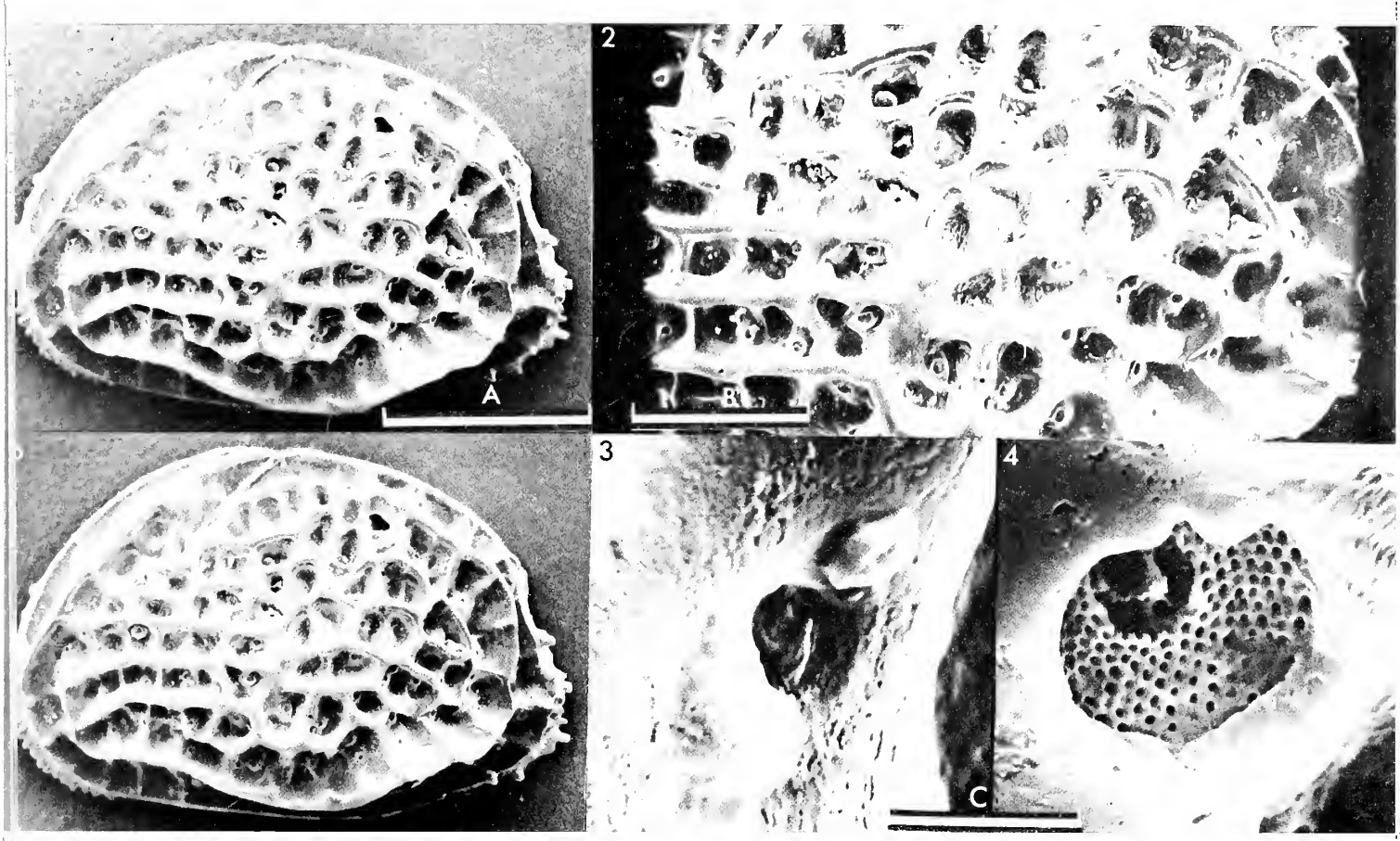


Text-fig. 1. LV reticular diagram, modified after Pokorný (*Acta Univ. Carolinae geol.*, 1968).

Text-fig. 2. RV int. lat. musc. sc.

Explanation of Plate 3, 60

Figs. 1–3, ♀ RV (**190513**, 690 μm long): fig. 1, int. lat.; fig. 2, ant. hinge element; fig. 3, post. hinge element.
Scale A (250 μm; × 133), fig. 1; scale B (100 μm; × 400), figs. 2, 3.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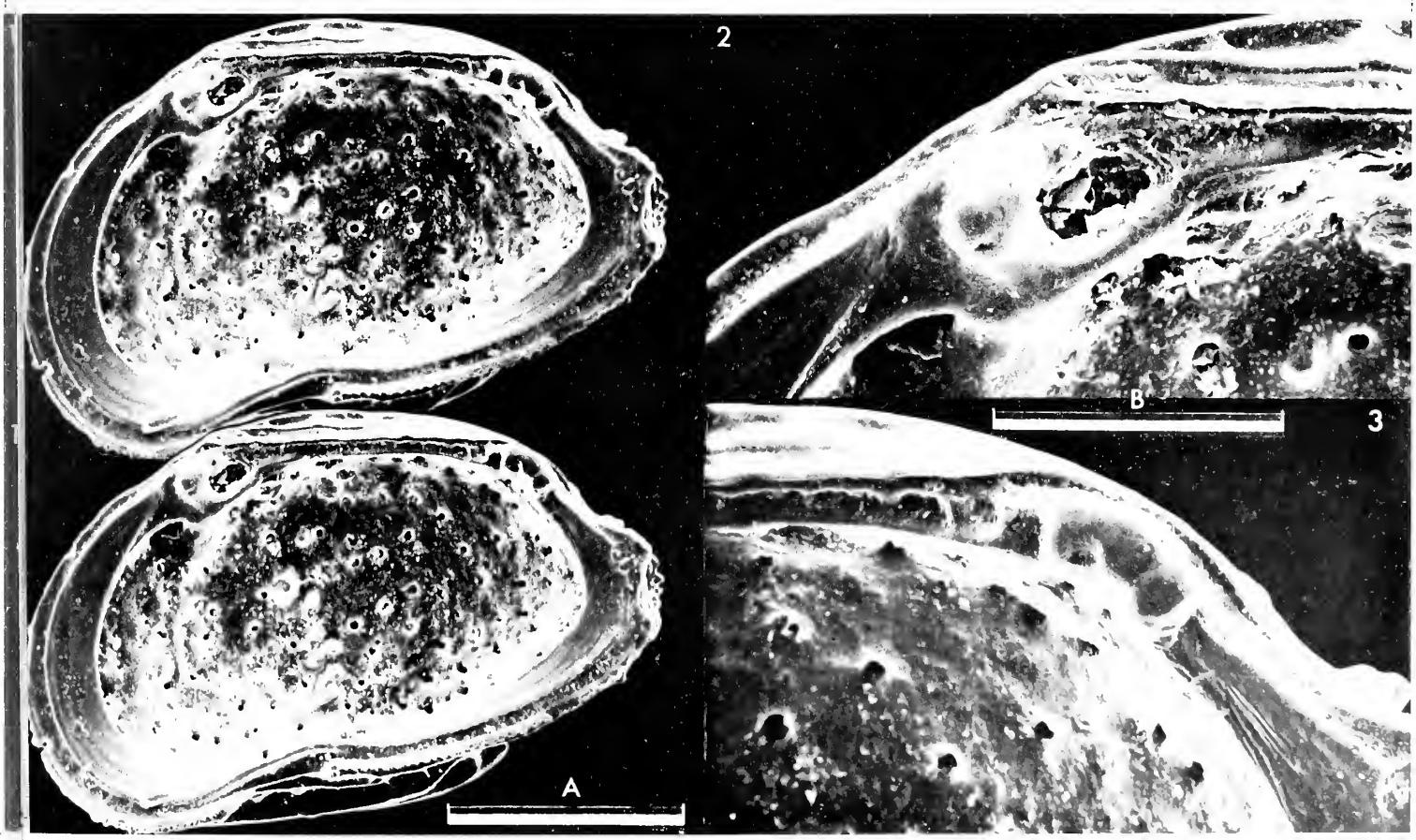
2
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595.337.3 (118.213) (560:161.035.37): 551.351 + 552.513 + 552.542

ON *CYTHERELLA* (*CYTHERELLOIDEA*) *PETROSA* DORUK sp. nov.

by Neriman Doruk
(*University of Leicester, England*)

Cytherella (*Cytherelloidea*) *petrosa* sp. nov.

Holotype: Brit. Mus. (Nat. Hist.) **IO 5771**, ♂ LV.

Type locality: A road section 2 km S of Salbaş, Adana area of Turkey; approx. lat. 37°07′N, long. 35°08′E. Tortonian (Upper Miocene); yellow sandstone with abundant molluscs and foraminifera. Presumed shallow marine.

Derivation of name: From the Greek 'rocky', with reference to the nature of the surface ornament.

Figured specimens: Brit. Mus. (Nat. Hist.) **IO 5770** (♀ RV: Pl **3**, 62, fig. 1), **IO 5771** (♂ LV: Pl. **3**, 62, fig. 2; Pl. **3**, 64, fig. 3), **IO 5772** (♀ RV: Pl. **3**, 64, figs. 2, 4). The specimen figured in Pl. **3**, 64, fig. 1, has been broken since preparation and photography.

Explanation of Plate 3, 62

Fig. 1, ♀ RV, ext. lat. (**IO 5770**, 650 μm long); fig. 2, ♂ LV, ext. lat. (holotype, **IO 5771**, 630 μm long).
Scale A (250 μm; × 131), fig. 1; scale B (250 μm; × 137), fig. 2.

Figured specimens (contd.): **IO 5770** and **IO 5771** from type locality, 7 m from the base and at the base of the section respectively. **IO 5772** from a road section, 4 m from the base, 1 km N of Salbaş, Turkey; approx. lat. 37°08′N, long. 35°08′E; Tortonian, grey marl with molluscs and foraminifera; presumed shallow marine.

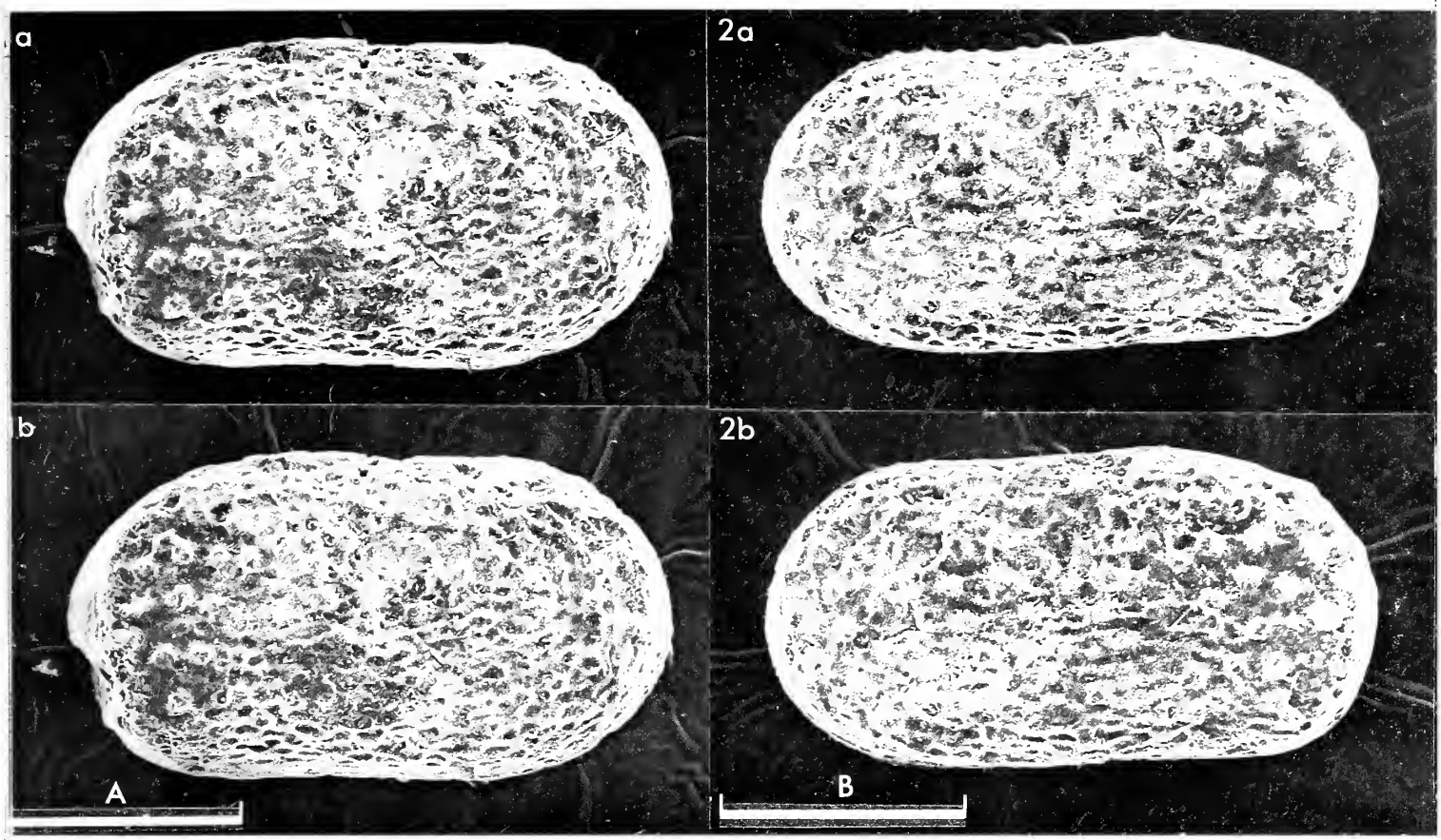
Diagnosis: Steep dorsally; surface nodose and reticulate.

Remarks: Surface variably reticulate and nodulose (see Pl. **3**, 64, figs. 2, 4). Sexual dimorphism: males more elongate (see Pl. **3**, 62, figs. 1, 2).

Distribution: Known as yet only from the Upper Miocene near Salbaş in the Adana area of Turkey.

Explanation of Plate 3, 64

Fig. 1, ♀ RV, int. lat. (broken, 640 μm long); fig. 2, ♀ RV, ext. lat. (**IO 5772**, 640 μm long); fig. 3, ♂ LV, detail of surface ornament (holotype, **IO 5771**); fig. 4, ♀ RV, detail of surface ornament (**IO 5772**).
Scale A (250 μm; × 106), figs. 1, 2; scale B (50 μm; × 548), figs. 3, 4.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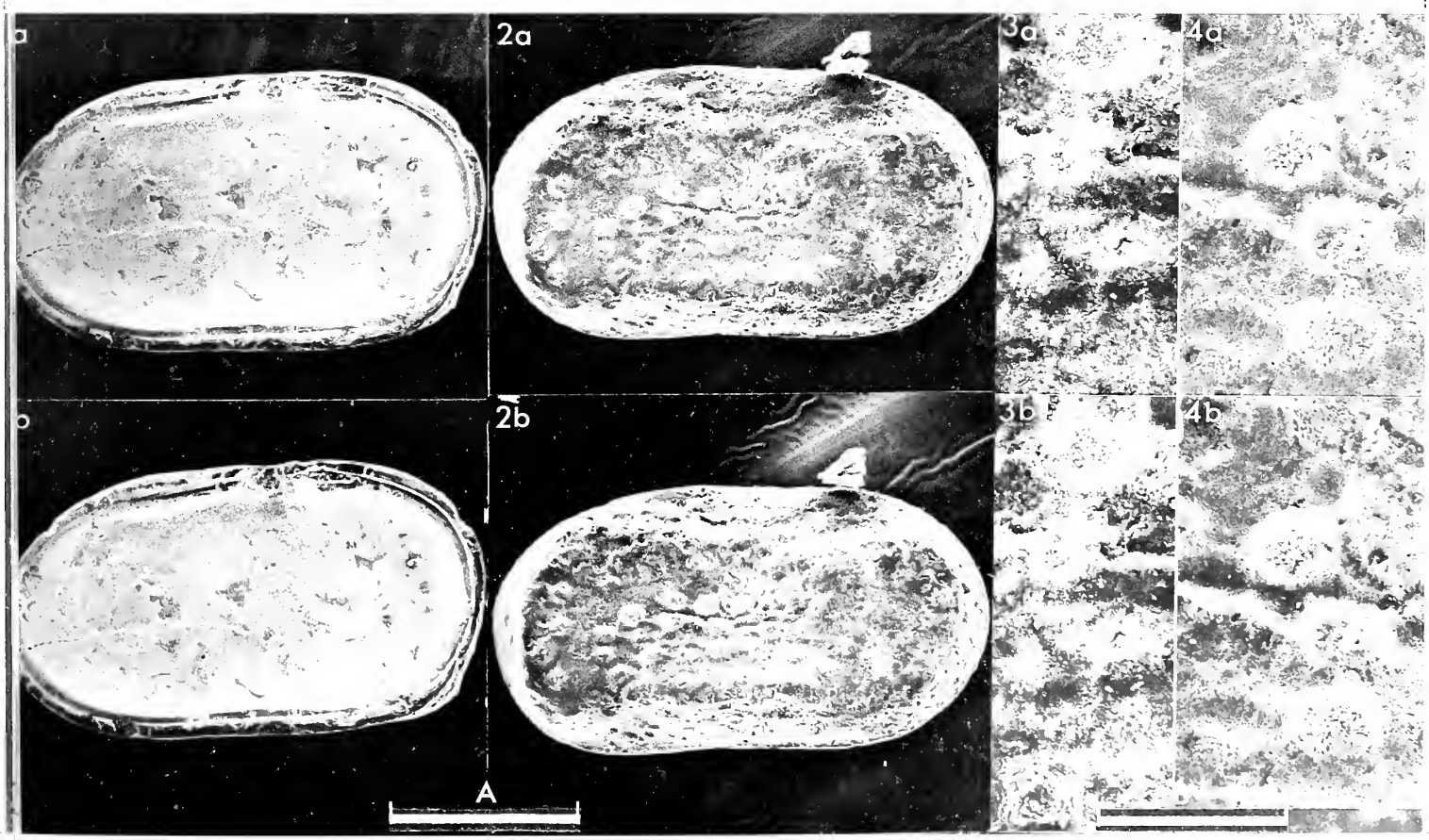

a
2a
3a
4a
b
2b
3b
4b
A

ON *CYTHERELLA* (*CYTHERELLOIDEA*) *OCHTHODES* DORUK sp. nov.

by Neriman Doruk
(*University of Leicester, England*)

Cytherella (*Cytherelloidea*) *ochthodes* sp. nov.

Holotype: Brit. Mus. (Nat. Hist.) **IO 5759**, ♀ RV.

Type locality: A road section between Babatorun and Com, 1 km SW of Babatorun, Antakya region of Turkey; approx. lat. 36°04′N, long. 36°15′E. Uppermost Miocene; yellow sandstone with molluscan shell fragments. Presumed littoral.

Derivation of name: From the Greek 'hilly', referring to the posterior scarp.

Figured specimens: Brit. Mus. (Nat. Hist.) **IO 5759** (♀ RV: Pl. **3**, 66, fig. 1; Pl. **3**, 68, fig. 2), **IO 5760** (♀ LV: Pl. **3**, 66, fig. 2; Pl. **3**, 68, fig. 1).
Both specimens are from about 15 m above the base of the section at the type locality.

Explanation of Plate 3, 66

Fig. 1, ♀ RV, ext. lat. (holotype, **IO 5759**, 710 μm long); fig. 2, ♀ LV, ext. lat. (**IO 5760**, 620 μm long).
Scale A (250 μm; × 115), fig. 1; scale B (250 μm; × 135), fig. 2.

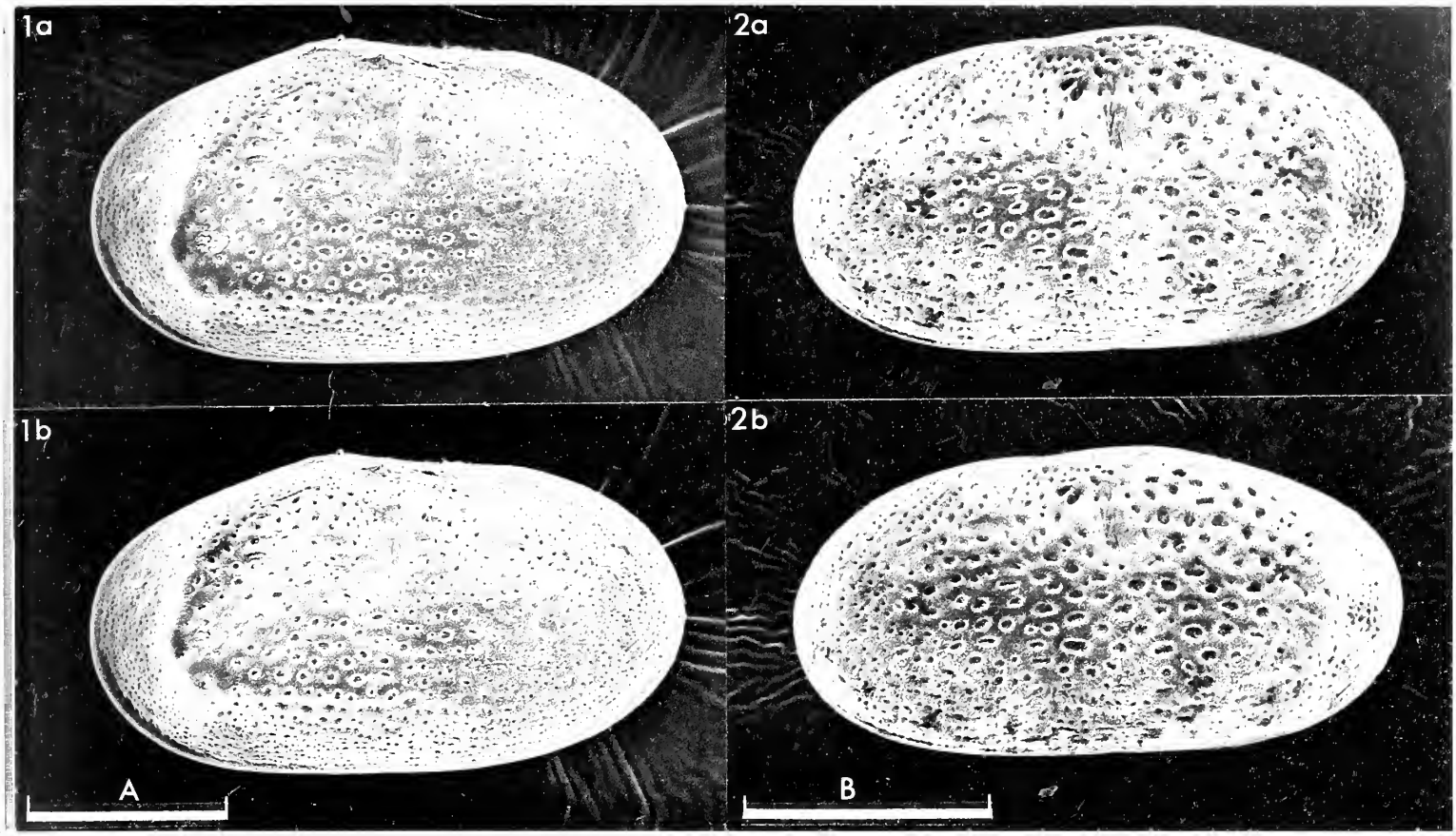
Diagnosis: Foveolate and punctate; posterior scarp inclined with variable and irregular edge.

Remarks: Differs from *Cytherella* (*Cytherelloidea*) *variopunctata* (Lienenklaus) in shape. Variable in size of pits (see Pl. **3**, 66, figs. 1, 2). Sexual dimorphism: males a little less high.

Distribution: Known so far only from type locality, Turkey.

Explanation of Plate 3, 68

Fig. 1, ♀ LV, int. lat. (**IO 5760**); fig. 2, ♂ RV, int. lat. (holotype, **IO 5759**).
Scale A (250 μm; × 135), fig. 1; scale B (250 μm; × 115), fig. 2.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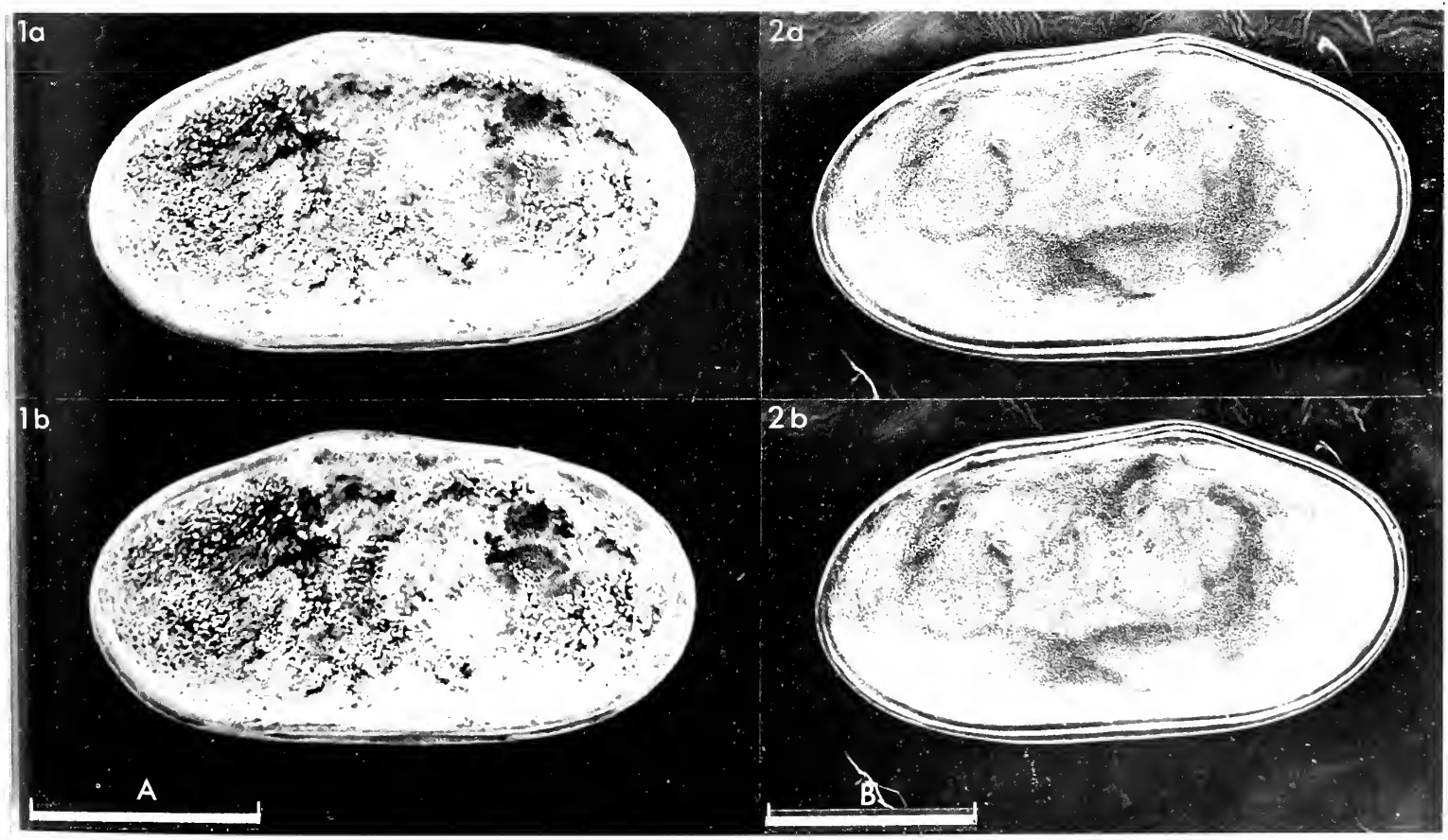
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Stereo-Atlas of Ostracod Shells 3 (14) 69–72 (**1976**)
595.337.3 (118.21) (560:161.034.36): 551.35 + 552.541

ON *CYTHERELLA* (*CYTHERELLOIDEA*) *CHOSTA* DORUK sp. nov.

by Neriman Doruk
(*University of Leicester, England*)

Cytherella (*Cytherelloidea*) *chosta* sp. nov.

Holotype: Brit. Mus. (Nat. Hist.) **IO 5766**, ♀ RV.

Type locality: A road section 11 km SW of Kuzucubelen, the Mersin area of Turkey; approx. lat. 36°45′N, long. 34°22′E. Lower Miocene; limestone with molluscs, foraminifera and the ostracods *Bythoceratina*, *Bairdia*, *Buntonia* and *Paracypris*. Presumed deep marine.

Derivation of name: From the Greek 'piled up', referring to the fancied resemblance of the papillate ornament to drifts of sand.

Figured specimens: Brit. Mus. (Nat. Hist.) **IO 5766** (♀ RV: Pl. **3**, 70, figs. 1, 3), **IO 5767** (♂ LV: Pl. **3**, 70, fig. 2), **IO 5768** (♂ LV: Pl. **3**, 72, fig. 1), **IO 5769** (♀ RV: Pl. **3**, 72, figs. 2, 3).
All specimens are from the base of the type section.

Explanation of Plate 3, 70

Fig. 1, ♀ RV, ext. lat. (holotype, **IO 5766**, 770 μm long); fig. 2, ♂ LV, ext. lat. (**IO 5767**, 760 μm long); fig. 3, ♀ RV, ext. lat., detail of papillate ornament (holotype, **IO 5766**).
Scale A (250 μm; × 105), fig. 1; scale B (250 μm; × 107), fig. 2; scale C (20 μm; × 1050), fig. 3.

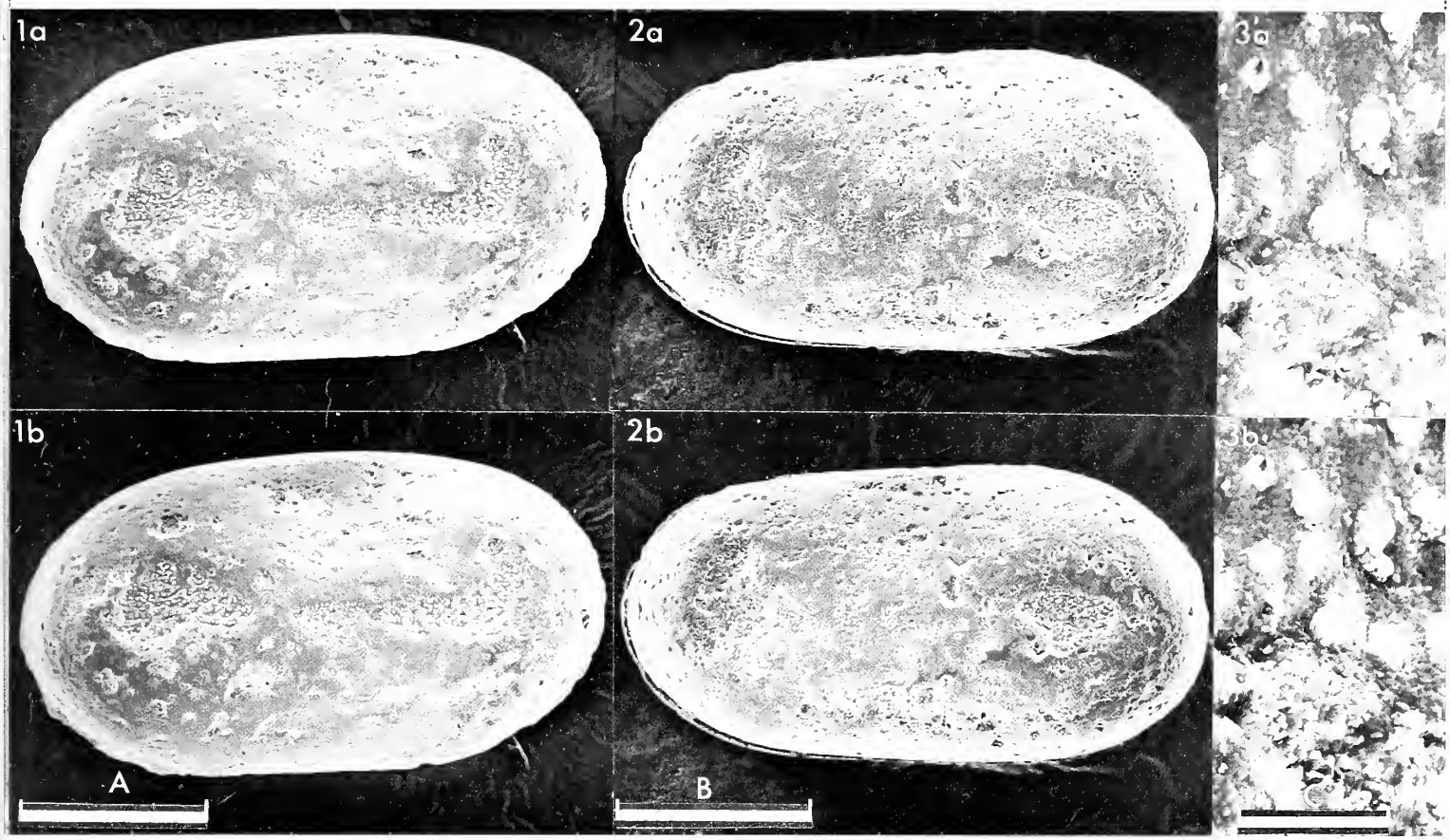
Diagnosis: Carapace oval shaped, surface grooved laterally. Papillate ornament in grooved areas (see Pl. **3**, 70, figs. 1–3) is arranged in rows.

Remarks: The extent of the grooved areas is variable. Sexual dimorphism: males less high (see Pl. **3**, 70, figs. 1, 2).

Distribution: Known as yet only from the Lower Miocene of the Mersin area of Turkey.

Explanation of Plate 3, 72

Fig. 1, ♂ LV, int. lat. (**IO 5768**, 755 μm long); fig. 2, ♀ RV, int. lat. (**IO 5769**, 760 μm long); fig. 3, ♀ RV, int. musc. sc. (**IO 5769**).
Scale A (500 μm; × 90), figs. 1, 2; scale B (50 μm; × 450), fig. 3.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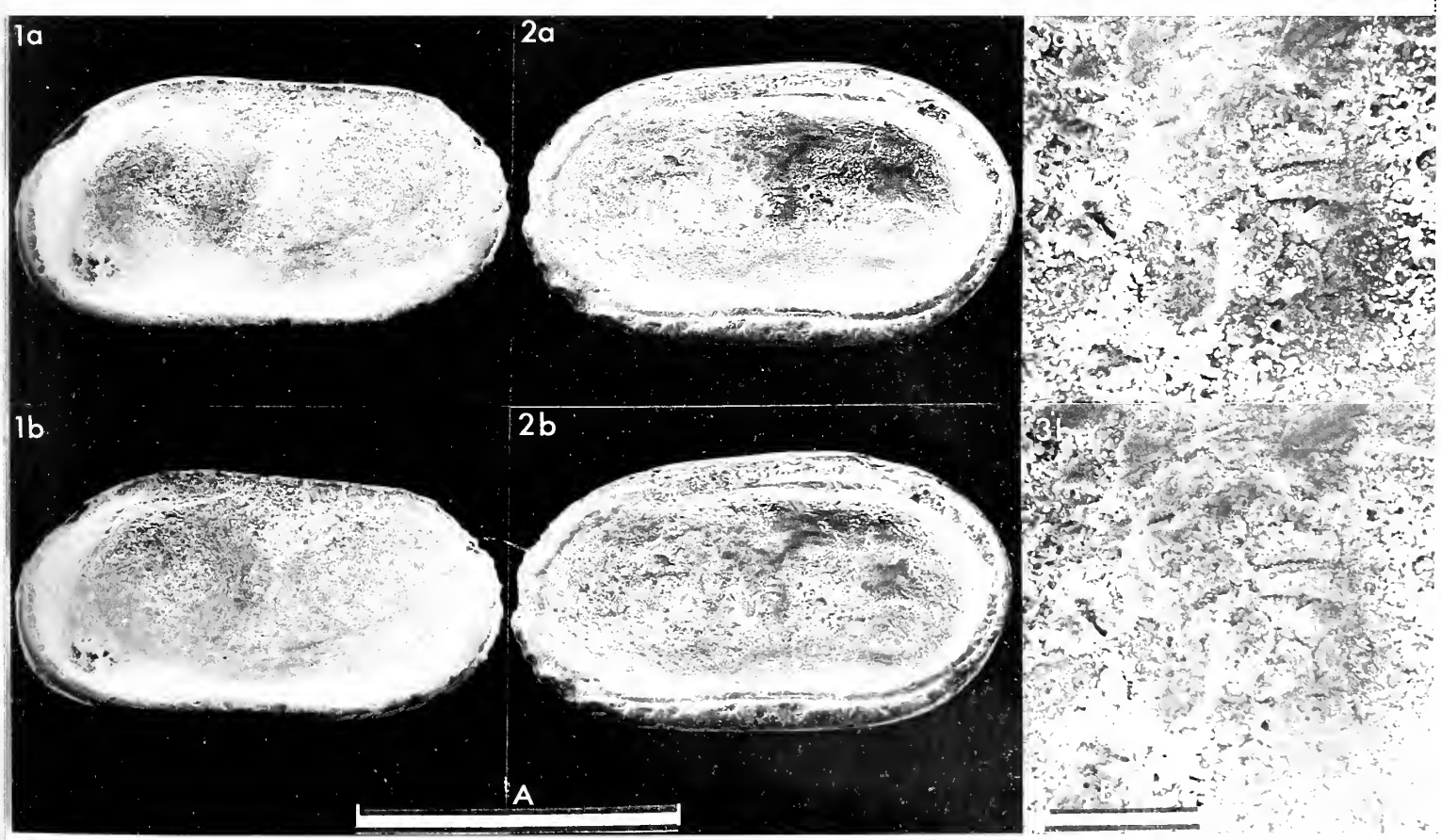
1a
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Stereo-Atlas of Ostracod Shells—Vol. 3, Part 1

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A Stereo-Atlas of Ostracod Shells

edited by R. H. Bate, J. W. Neale, David J. Siveter and P. C. Sylvester-Bradley

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Acknowledgements

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595.337.14 (116.222) (427.4:162.001.54): 551.351+552.54

ON *GLYPTOCYTHERE POLITA* BATE

by Carol Mayes
(*British Museum* [*Natural History*], *London*)

Glyptocythere polita Bate, 1965

1965 *Glyptocythere polita* sp. nov. R. H. Bate, *Bull. Br. Mus. nat. Hist. (Geol.)* **11** (3), 107, pl. 5, figs. 8–11, pl. 6, figs. 1–9.

Holotype: Brit. Mus. (Nat. Hist.) **IO 1724**, ♀ carapace.

Type locality: Bed 7, *Glyptocythere polita* Zone, Grey Limestone Series, Bajocian; Hundale Point, Cloughton, Yorkshire, England. Grid Ref.: TA 024949.

Figured specimens: Brit. Mus. (Nat. Hist.) nos. **IO 1724** (♀ car.: Pl. **3**, 74, fig. 2), **IO 1726** (♂ car.: Pl. **3**, 74, fig. 3; Pl. **3**, 76, figs. 2, 4), **IO 1727** (♂ car.: Pl. **3**, 76, fig. 6), **IO 1736** (♀ car.: Pl. **3**, 74, fig. 1; Pl. **3**, 76, fig. 5), **IO 1743** (♀ car.: Pl. **3**, 76, fig. 1), **OS 6853** (juv. car.: Pl. **3**, 76, fig. 3). Nos. **IO 1724**, **IO 1726**, **IO 1727**, **IO 1736**, **OS 6853** are all from the type locality and level. **IO 1743** is from base bed 6, Bajocian, Bloody Beck, Yorkshire, England; Grid Ref.: SE 94559805.

Explanation of Plate 3, 74

Fig. 1, ♀ car., ext. rt. lat. (**IO 1736**, 712 μm long); fig. 2, ♀ car., ext. lt. lat. (holotype, **IO 1724**, 860 μm long); fig. 3, ♂ car., ext. rt. lat. (**IO 1726**, 1050 μm long).
Scale A (200 μm; ×78), fig. 1; scale B (250 μm; ×67), fig. 2; scale C (250 μm; ×61), fig. 3.

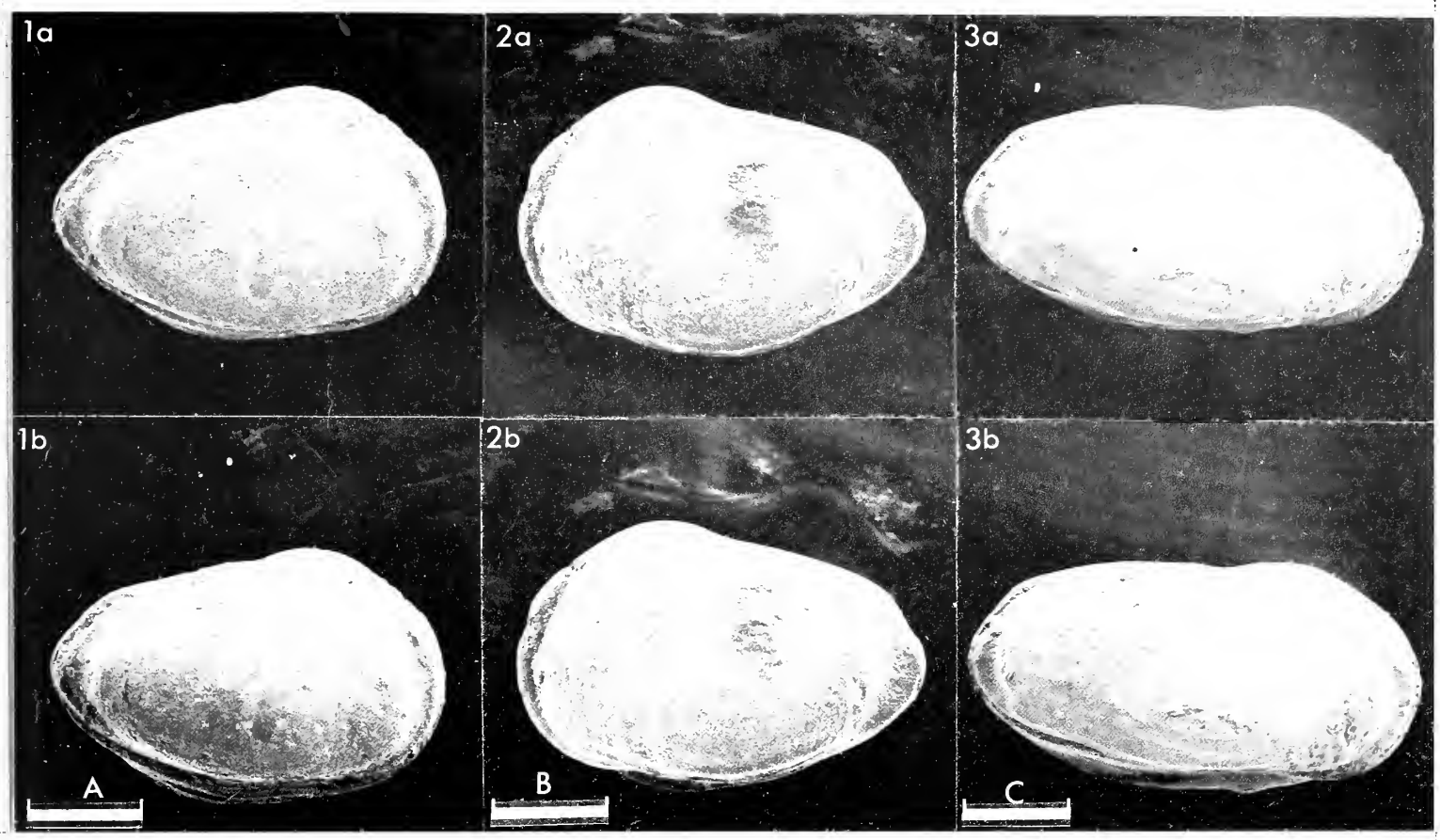
Diagnosis: Large species of genus *Glyptocythere* with subquadrate to subtriangular carapace. Shell surface usually smooth with shallow median sulcus marking the position of adductor muscles (occasional wrinkles in dorsomedian area). Ventrolateral margin projects downward, sometimes forming a thin keel, particularly in the female dimorph. Prominently displayed normal pore canals.

Remarks: The low keel as seen in the holotype (Pl. **3**, 74, fig. 2) is not always developed in the female and is very rare in the male. The juvenile hinge is anti-merodont.

Distribution: A marine species. Found in the Bajocian, *G. polita* Zone in the lower part of the Grey Limestone Series of Hundale Point (beds 5–9, 11, 12); Ravenscar (beds 3–9); Bloody Beck (beds 2–6), Yorkshire, England (Bate, op. cit.).

Explanation of Plate 3, 76

Fig. 1, ♀ car., ext. vent. (**IO 1743**, 925 μm long); fig. 2, ♂ car., ext. vent. (**IO 1726**, 1050 μm long); fig. 3, juv. car., ext. lt. lat. (**OS 6853**, 655 μm long); fig. 4, ♂ car., ext. lt. lat. (**IO 1726**, 1050 μm long); fig. 5, ♀ car., ext. ant. (**IO 1736**, 712 μm long); fig. 6, ♂ car., ext. ant. (**IO 1727**, 1125 μm long).
Scale A (200 μm; ×45), fig. 1; scale B (250 μm; ×40), figs. 2, 4; scale C (200 μm; ×74), fig. 3; scale D (200 μm; ×98), fig. 5; scale E (200 μm; ×80), fig. 6.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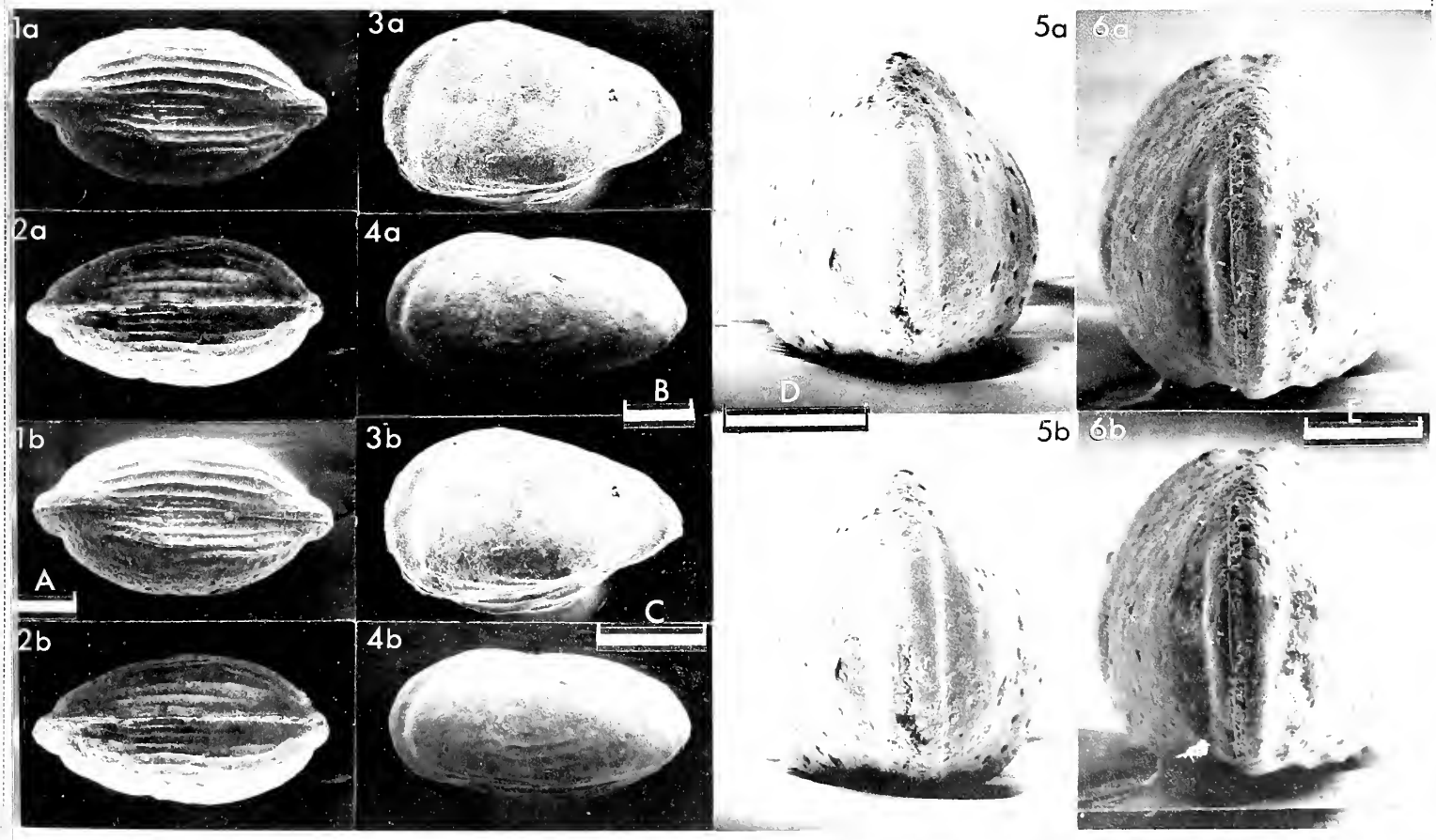
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595.337.14 (116.222) (427.4:162.001.54):551.351+552.54

ON *GLYPTOCYTHERE COSTATA* BATE

by Carol Mayes
(*British Museum* [*Natural History*], *London*)

Glyptocythere costata Bate, 1965

1965 *Glyptocythere costata* sp. nov. R. H. Bate, *Bull. Br. Mus. nat. Hist. (Geol.)* **11** (3), 106, pl. 5, figs. 1–7.

Holotype: Brit. Mus. (Nat. Hist.) **IO 1775**, ♀ carapace.

Type locality: Base of bed 10, top of *Glyptocythere polita* Zone, Grey Limestone Series, Bajocian; Ravenscar, Yorkshire, England. Grid Ref.: NZ 988012.

Figured specimens: Brit. Mus. (Nat. Hist.) nos. **IO 1775** (♀ car.: Pl. **3**, 78, figs. 1, 2), **IO 1777** (♀ car.: Pl. **3**, 80, figs. **4**, 5), **OS 6854** (♂ car.: Pl. **3**, 80, fig. 3), **OS 6855** (juv. car.: Pl. **3**, 80, figs. 1, 2), **OS 6856** (♂ car.: Pl. **3**, 78, fig. 3; Pl. **3**, 80, fig. 6). All specimens are from the type locality and level.

Explanation of Plate 3, 78

Fig. 1, ♀ car., ext. lt. lat. (holotype, **IO 1775**, 646 μm long); fig. 2, ♀ car., ext. rt. lat. (holotype, **IO 1775**); fig. 3, ♂ car., ext. lt. lat. (**OS 6856**, 731 μm long).
Scale A (200 μm; × 88), figs. 1, 2; scale B (200 μm; × 89), fig. 3.

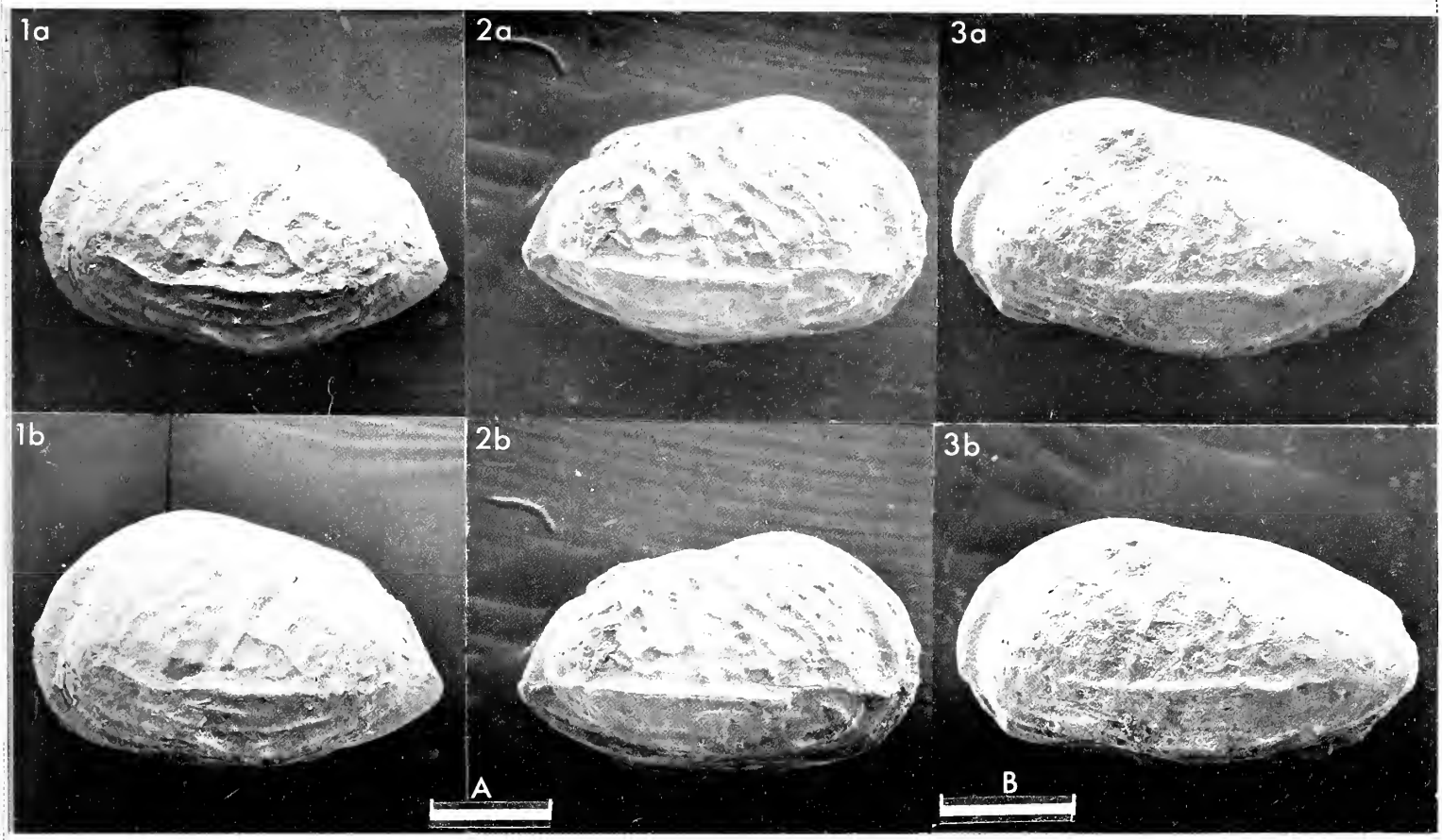
Diagnosis: Species of *Glyptocythere* with subquadrate, posteriorly tapered carapace. Shell surface ornamented medially by irregular, branching, transverse ridges, that diverge from the dorsal margin and by two main parallel longitudinal ridges.

Remarks: The lowermost of the longitudinal ventrolateral ridges sometimes forms a prominent keel. The minor ventrolateral and ventral ridges occasionally bifurcate. Dorsal margin of left valve concave, that of right valve strongly convex.

Distribution: A marine species so far found only in the Bajocian, Grey Limestone Series, of Hundale Point (bed 5); Ravenscar (beds 8, 10, 12), Yorkshire, England (Bate, op. cit.).

Explanation of Plate 3, 80

Fig. 1, juv. car., ext. lt. lat. (**OS 6855**, 578 μm long); fig. 2, juv. car., ext. vent. (**OS 6855**); fig. 3, ♂ car., ext. dors. (**OS 6854**, 680 μm long); fig. 4, ♀ car., ext. dors. (**IO 1777**, 612 μm long); fig. 5, ♀ car., ext. ant. (**IO 1777**); fig. 6, ♂ car., ext. ant. (**OS 6856**, 731 μm long).
Scale A (100 μm; × 79), figs. 1, 2; scale B (100 μm; × 68), fig. 3; scale C (100 μm; × 74), fig. 4; scale D (100 μm; × 118), fig. 5; scale E (100 μm; × 105), fig. 6.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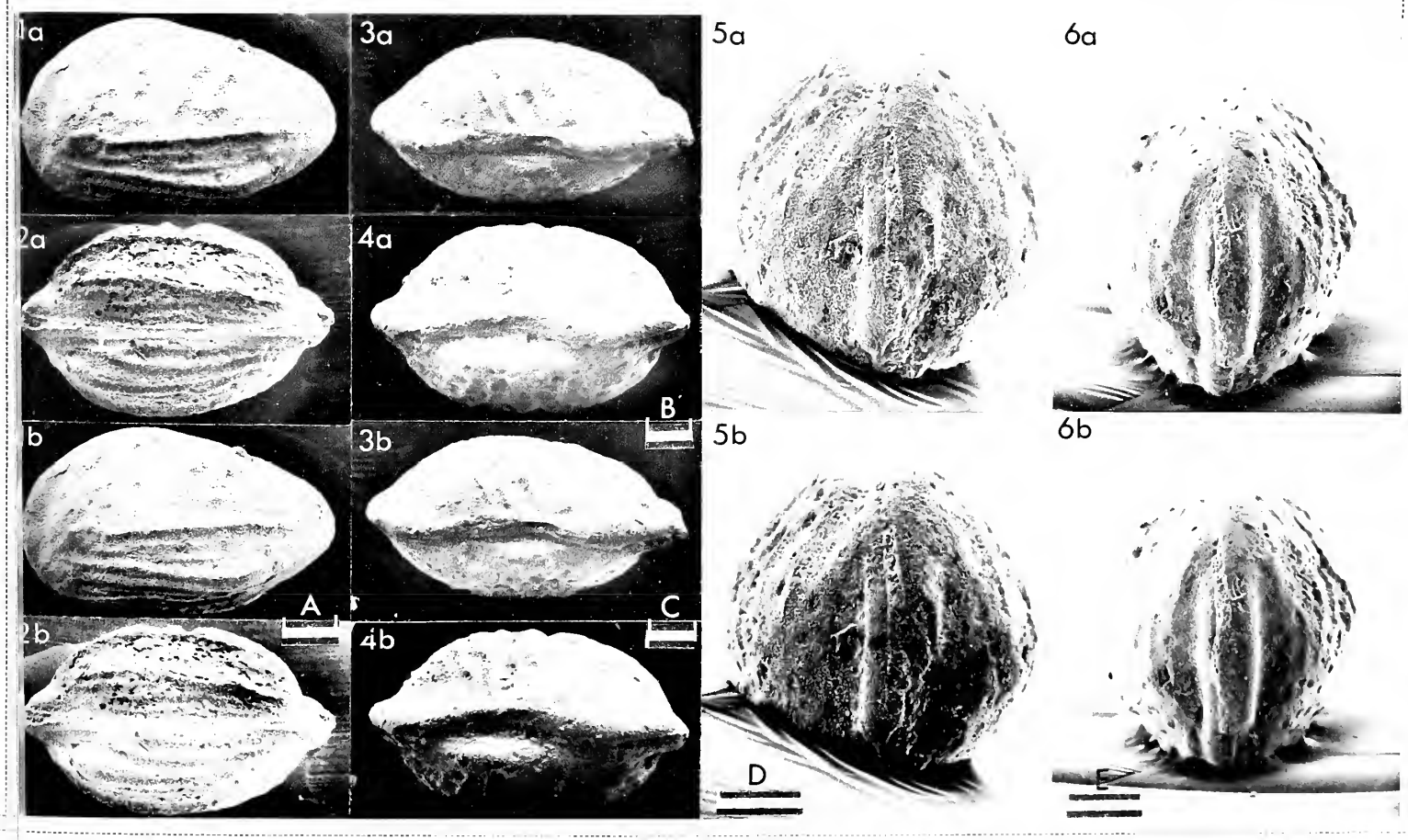
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595.337.14 (119.9) (261.263: 161.010.59 + 261.263: 161.011.58 + 261.268: 162.003.50 + 261.2: 161.015.28 + 262.116: 161.007.43): 551.351

ON *LOXOCONCHA RHOMBOIDEA* (FISCHER)

by John Athersuch and John E. Whittaker
(*University of Leicester, England, and British Museum* [*Natural History*], *London, England*)

Genus *LOXOCONCHA* Sars, 1866

1866 *Loxoconcha* G. O. Sars, *Forh. VidenskSelsk. Krist.* **1865**, 61.
1866 *Loxoleberis* G. O. Sars, *ibid.*, 130 (*lapsus calami*).
1866 *Normania* G. S. Brady, *Trans. zool. Soc. Lond.* **5**, 382.

Type-species (subsequent designation by Brady & Norman, 1889): *Cythere rhomboidea* Fischer, 1855

Diagnosis: Carapace rather inflated in dorsal view, sometimes with lateral protuberances in posterior half. Generally rhomboidal in side view with characteristic compressed posteroventral margin border. Ornament variously developed concentrically arranged pittings. Hinge gongylodont; median element strongly crenulate. Frontal muscle scar C-shaped. The upper of the middle two adductor muscle scars is the largest. Fulcral point small and simple or absent.

Remarks: The majority of species of *Loxoconcha* examined by the present authors closely resemble the type species with respect to shape, ornamentation, muscle scar patterns and hinge. However, *L. rubritincta* Ruggieri possesses a muscle scar pattern and hinge structure intermediate between *Loxoconcha* and *Sagmatocythere* (see *Stereo-Atlas of Ostracod Shells*, **3**, 107–116, 1976).

Explanation of Plate 3, 82

Fig. 1, ♀ RV, ext. lat. (neotype, **1975.1238**, 671 μm long); fig. 2, ♀ LV, ext. lat. (**1975.1239**, 659 μm long); fig. 3, juv. –1 RV, ext. lat. (**1975.1240**, 488 μm long).
Scale A (200 μm; × 98), figs. 1, 2; scale B (200 μm; × 115), fig. 3.

Loxoconcha rhomboidea (Fischer, 1855)

1854 *Cythere flavida* O. F. Müller; W. Zenker, *Arch. Naturgesch.* **20**, 86, pl. 5, fig. B4, ? figs. B1–3 (*non C. flavida* O. F. Müller, 1785).
1855 *Cythere rhomboidea* sp. nov. S. Fischer, *Abh. bayer. Akad. Wiss.* **7**, 656.
?1865 *Cythere* (*Normania*) *carinata* sp. nov. G. S. Brady, *Ann. Mag. nat. Hist.*, ser. 3, **16**, 189, pl. 9, figs. 1–4.
1868 *Loxoconcha impressa* (Baird); G. S. Brady, *Trans. Linn. Soc. Lond.* 26, 433, pl. 25, figs. 35–40, pl. 40, fig. 4 (*non Cythere impressa* Baird, 1850).

Neotype: (here designated). Brit. Mus. (Nat. Hist.) no. **1975.1238**; ♀ car. (subsequently split into valves) from the A. M. Norman coll.

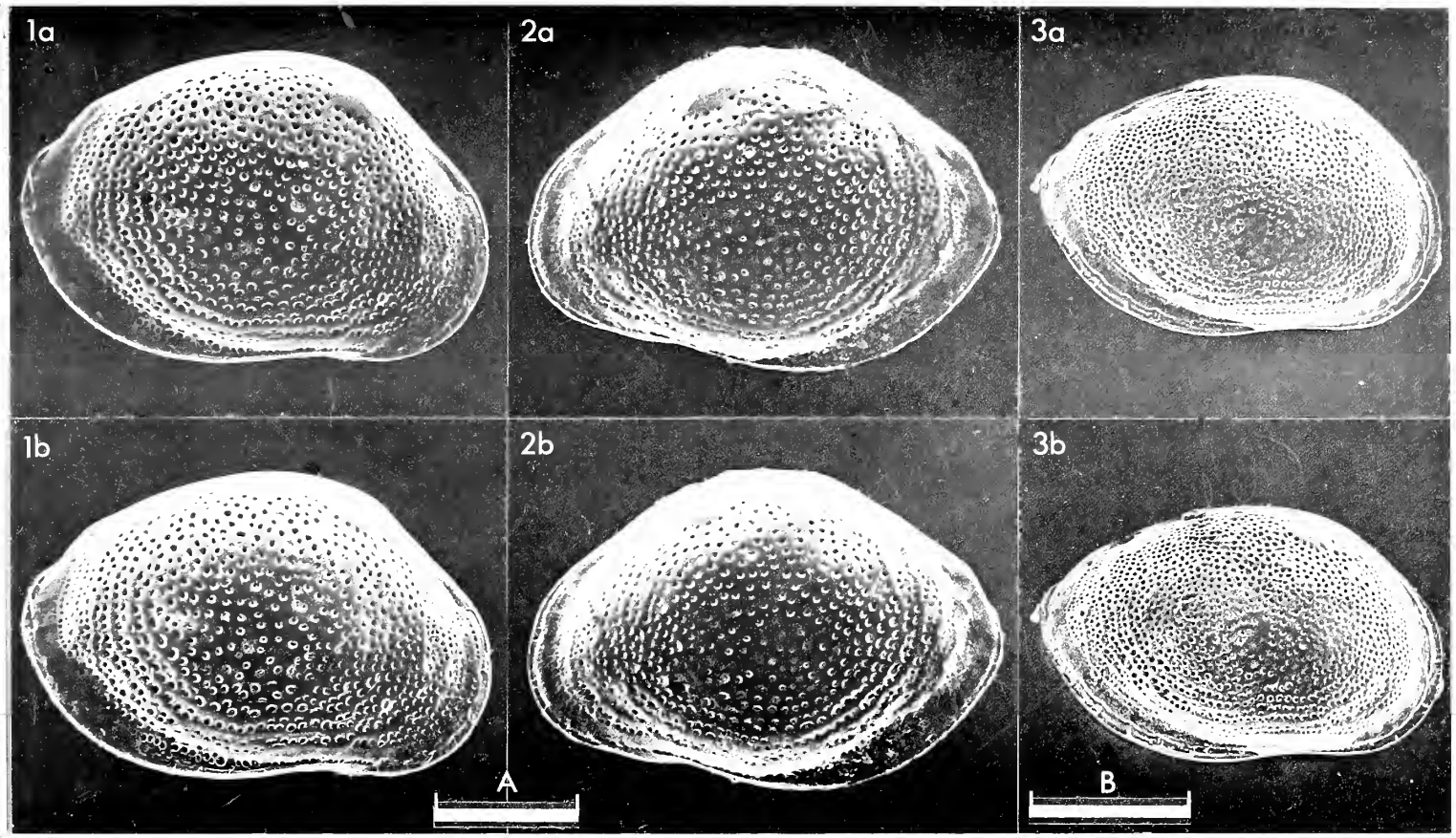
Type locality: Lervig (Larvik), S Norway, approx. lat. 59°05′N, long. 10°00′E; Recent.

Figured specimens: Brit. Mus. (Nat. Hist.) nos. **1975.1238** Neotype (♀ RV: Pl. **3**, 82, fig. 1; Pl. **3**, 88, figs. 2, 4), **1975.1239** (♀ LV: Pl. **3**, 82, fig. 2), **1975.1240** (juv. –1: Pl. **3**, 82, fig. 3; Pl. **3**, 84, fig. 8), **1975.1241** (♀ car.: Pl. **3**, 84, fig. 1; Pl. **3**, 86, fig. 3; Pl. **3**, 88, fig. 1), **1975.1242** (♀ car.: Pl. **3**, 84, fig. 3), **1975.1243** (♂ car.: Pl. **3**, 84, fig. 4), **1975.1244** (♂ RV: Pl. **3**, 84, fig. 6), **1975.1245** (♂ LV: Pl. **3**, 84, fig. 7), **1975.1246** (♀ RV: Pl. **3**, 86, fig. 1; Pl. **3**, 88, figs. 3, 5), **1975.1248** (♂ LV & soft parts: Pl. **3**, 86, fig. 4), **1975.1247** (♀ RV: Pl. **3**, 86, fig. 2), **1976.693** (♂ LV: Pl. **3**, 84, fig. 2), **1976.694** (♂ RV: Pl. **3**, 84, fig. 5).

1975.1238 and **1975.1245** were taken from a slide in the Norman coll. in the Brit. Mus. (Nat. Hist.) marked 'Larvik'. **1975.1239**, **1240**, **1246**–**1248** coll. alive from *Enteromorpha* by J. E. Whittaker during August 1969 from Tidmoor Point, W Fleet, Dorset, England (approx. lat. 50°36′N, long. 2°30′W); salinity 34·4‰, water temp. 19·5°C, pH 8·3, O_2 123%. **1975.1242** and **1243** coll. alive from *Enteromorpha* by J. E. Whittaker during August 1968 from a rock pool at Osmington Mills, Wey-

Explanation of Plate 3, 84

Fig. 1, ♀ car., ext. rt. lat. (**1975.1241**, 585 μm long); fig. 2, ♂ LV, ext. lat. (**1976.693**, 695 μm long); fig. 3, ♀ car., ext. rt. lat. (**1975.1242**, 615 μm long); fig. 4, ♂ car., ext. rt. lat. (**1975.1243**, 732 μm long); fig. 5, ♂ RV, ext. lat. (**1976.694**, 700 μm long); fig. 6, ♂ RV, ext. lat. (**1975.1244**, 659 μm long); fig. 7, ♂ LV, details of ornament (**1975.1245**); fig. 8, juv. –1 RV, details of ornament (**1975.1240**).
Scale A (250 μm; × 65), figs. 1–6; scale B (25 μm; × 830), fig. 8; scale C (25 μm; × 790), fig. 7.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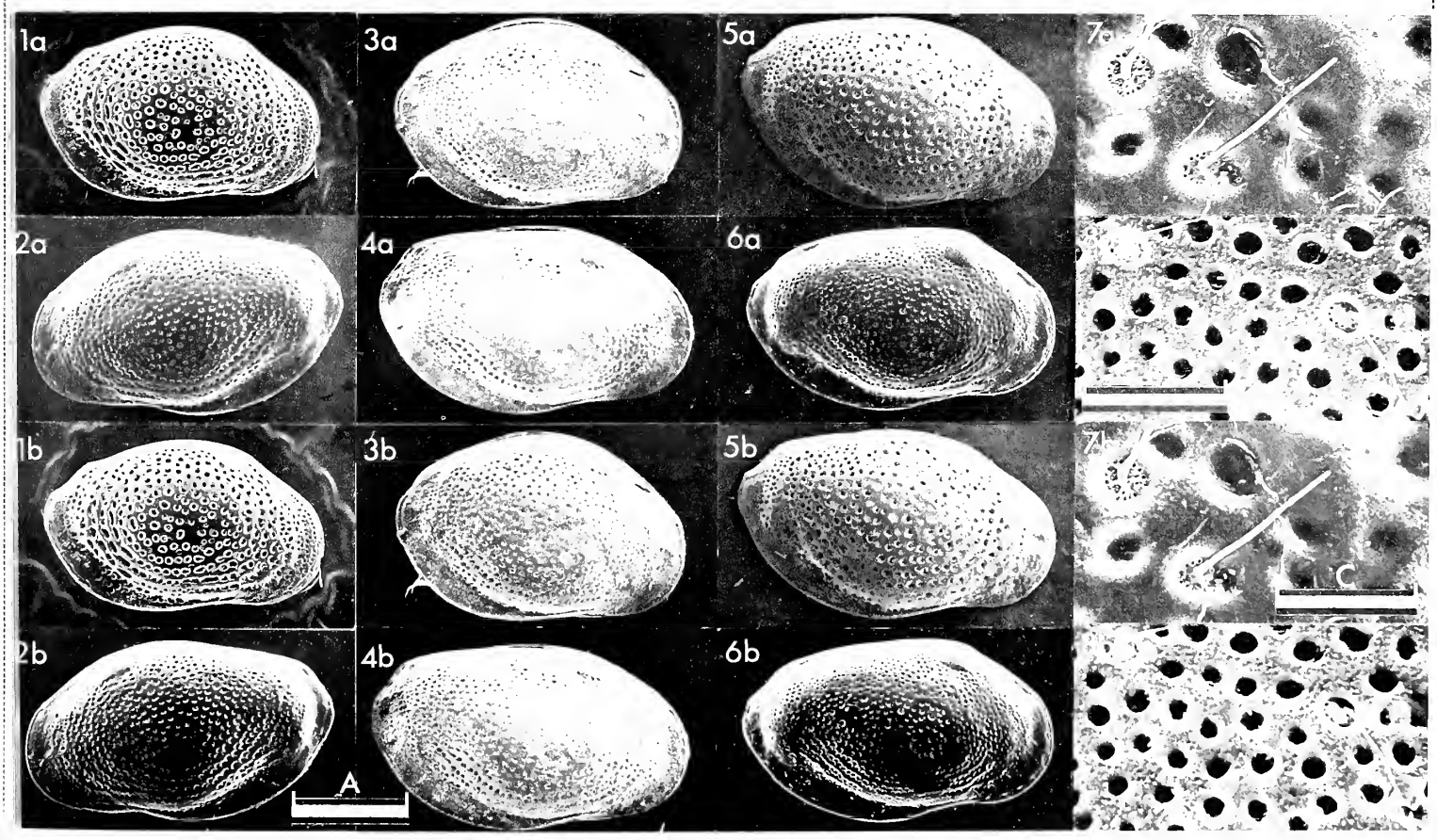
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Figured specimens (contd.): mouth Bay, Dorset, England (approx. lat. 50°38′N, long. 2°23′W); salinity 34·4‰, water temp. 16·1°C, pH 8·0, O_2 141%. **1975.1241**, from the shoreline of Madeira, was taken from the Brady coll., Brit. Mus. (Nat. Hist.). **1976.693** coll. by Dr E. Robinson from coarse sand at a depth of 10m, 2km off Las Palmas during November 1974. **1975.1244** is from Gullmar Fjord, Sweden (approx. lat. 58°15′N, long. 11°30′E) (O. Elofson coll.), and **1976.694**, containing remnants of soft parts is from St Jean, Monaco (approx. lat. 43°44′N, long. 7°25′E).

Diagnosis: Seen dorsally, widest point of shell in both sexes in middle. In lateral view, dorsal margin of female strongly arched; oral concavity marked in both sexes. Ornament of concentrically arranged fine to medium sized puncta.

Remarks: *C. rhomboidea* was erected by Fischer as a new species for *C. flavida* of Zenker, 1854, *non* O. F. Müller, 1785, and makes use of Zenker's original description and figures. Zenker's drawing of the carapace (op. cit., pl. 5, fig. B1) is not good and could equally be that of a male *Loxoconcha elliptica* Brady, 1868 (see *Stereo-Atlas of Ostracod Shells* **3**, 99–106, 1976), with which *L. rhomboidea* was long confused, but that of the copulatory appendage (fig. B4) is certainly of the present species (cf. our Text-fig. 2e; Pl. **3**, 86, fig. 4). As Zenker's material cannot be found (Drs H. Malz and K. Diebel, pers. comm.) it must be presumed lost and we now designate and figure a neotype from the same geographical region.

L. rhomboidea was also for long confused with *Cythere impressa* Baird, 1850, *non* M'Coy, 1844, but a study of Baird's figures (*Natural History of British Entomostraca*, Ray. Soc., London, 173, pl. 21, fig. 9) shows that that species is more probably a synonym of *Loxocoucha guttata* (Norman,

Explanation of Plate 3, 86

Fig. 1, ♀ RV, dors. (**1975.1246**, 646 μm long); fig. 2, ♀ RV, vent. (**1975.1247**, 645 μm long); fig. 3, ♀ LV, int. lat. (**1975.1241**, 585 μm long); fig. 4, ♂ LV, int. lat. showing soft parts (**1975.1248**, 680 μm long).
Scale A (200 μm; × 94), figs. 1, 2; scale B (200 μm; × 104), fig. 3; scale C (200 μm; × 90), fig. 4.

Remarks (contd.): 1865). Müller (1894, *Fauna Flora Golf. Neapel.* **21**) recorded a species he thought to be conspecific with *L. rhomboidea* under the name *L. impressa* from the Bay of Naples, but from his pl. 28, fig. 1 and the description on p. 342, it is clear he was referring, at least in part, to *L. affinis* (Brady, 1868) (see *Stereo-Atlas of Ostracod Shells* **3**, 91–98, 1976). For further discussion of the complicated synonymy of *L. rhomboidea* see Sylvester-Bradley, 1946 (*Ann. Mag. nat. Hist.* ser. 11, **13**, 195).

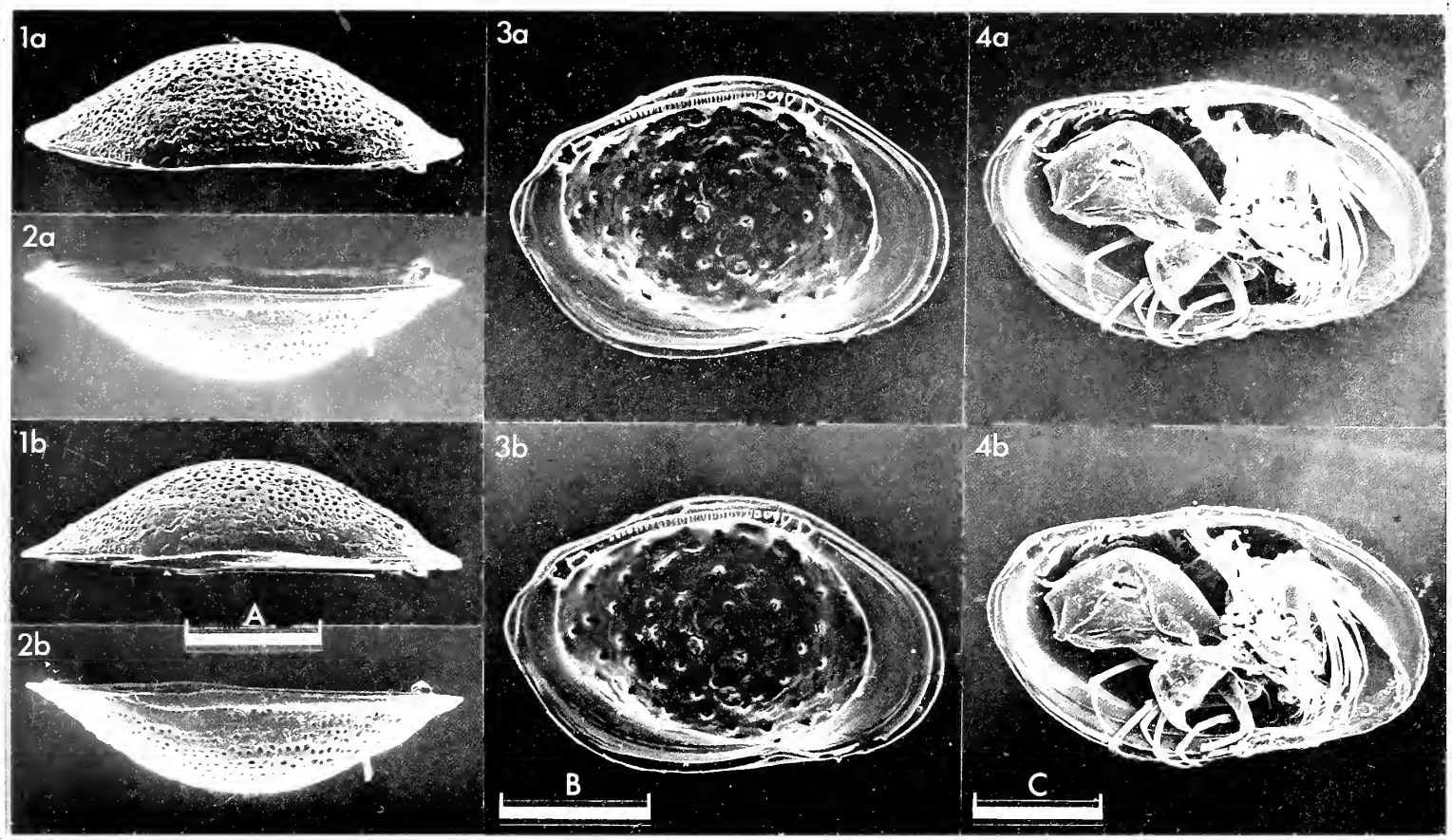
Distribution: A common phytal species in the eulittoral and sublittoral zones of the coasts of Europe from N Norway to Madeira and the Canary Islands, off N Africa. NW European specimens are always finely punctate, those to the S often more coarsely so.

Mediterranean records now need careful revision. Some of the Recent specimens examined, particularly those from the W Mediterranean (e.g. Monaco and Naples, Italy), do appear to be *L. rhomboidea*. Specimens from the eastern part have often proved to be *L. affinis* Brady, although some sub-Recent specimens from Cyprus (J. Athersuch coll.) may be considered as *L. rhomboidea*. Both species occur at Naples, Italy. Records of *L. rhomboidea* from the Black Sea (e.g. Schornikov, 1969, *Definitive Fauna of the Black and Azov Seas* **2**, 197, pl. 24, fig. 1) probably do not represent the present species. Specimens from the E coast of N America, attributed to *L. impressa* (Baird) (e.g. Cushman, 1906, *Proc. Boston Soc. nat. Hist.* **32**, pt. 10; Tressler & Smith, 1948, *Maryland Chesapeake Biol. Lab. Pub.* **71**) are now regarded as distinct species.

Brady recorded *Cythere* (*Normania*) *carinata*, of which the type material is presumed lost, from the Pleistocene Brickearths of the River Nar (Brady, 1865); later (Brady, 1868) he considered this species to be conspecific with *L. rhomboidea*, but no specimens attributable to this species have subsequently been found in these deposits (pers. comm. Dr E. Robinson).

Explanation of Plate 3, 88

Fig. 1, ♀ LV, musc. sc. (**1975.1241**); figs. 2, 4, ♀ LV, terminal hinge elements (neotype, **1975.1238**); figs. 3, 5, ♀ RV, terminal hinge elements (**1975.1246**).
Scale A (25 μm; × 495), fig. 1; scale B (50 μm; × 396), figs. 2–5.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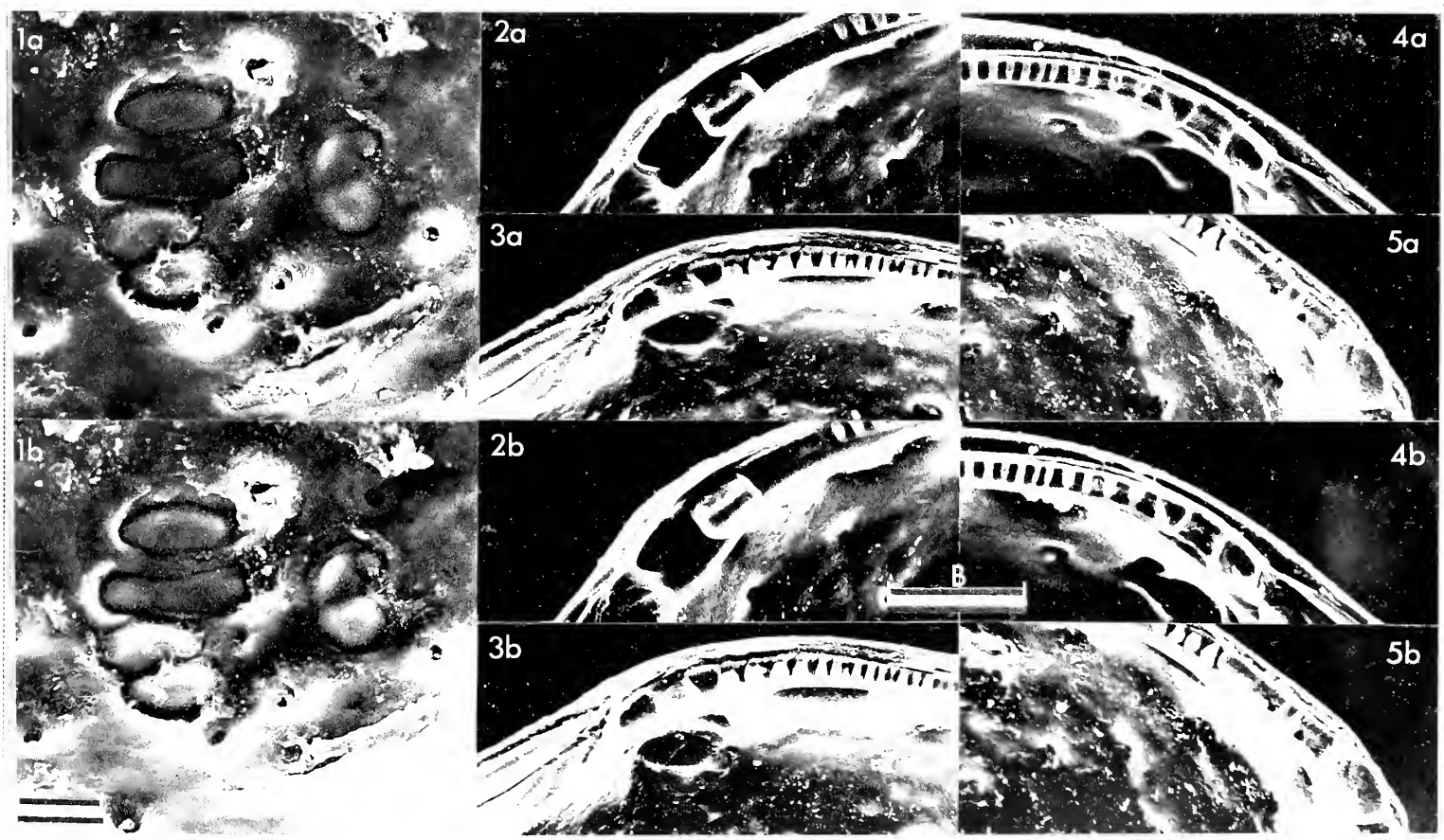
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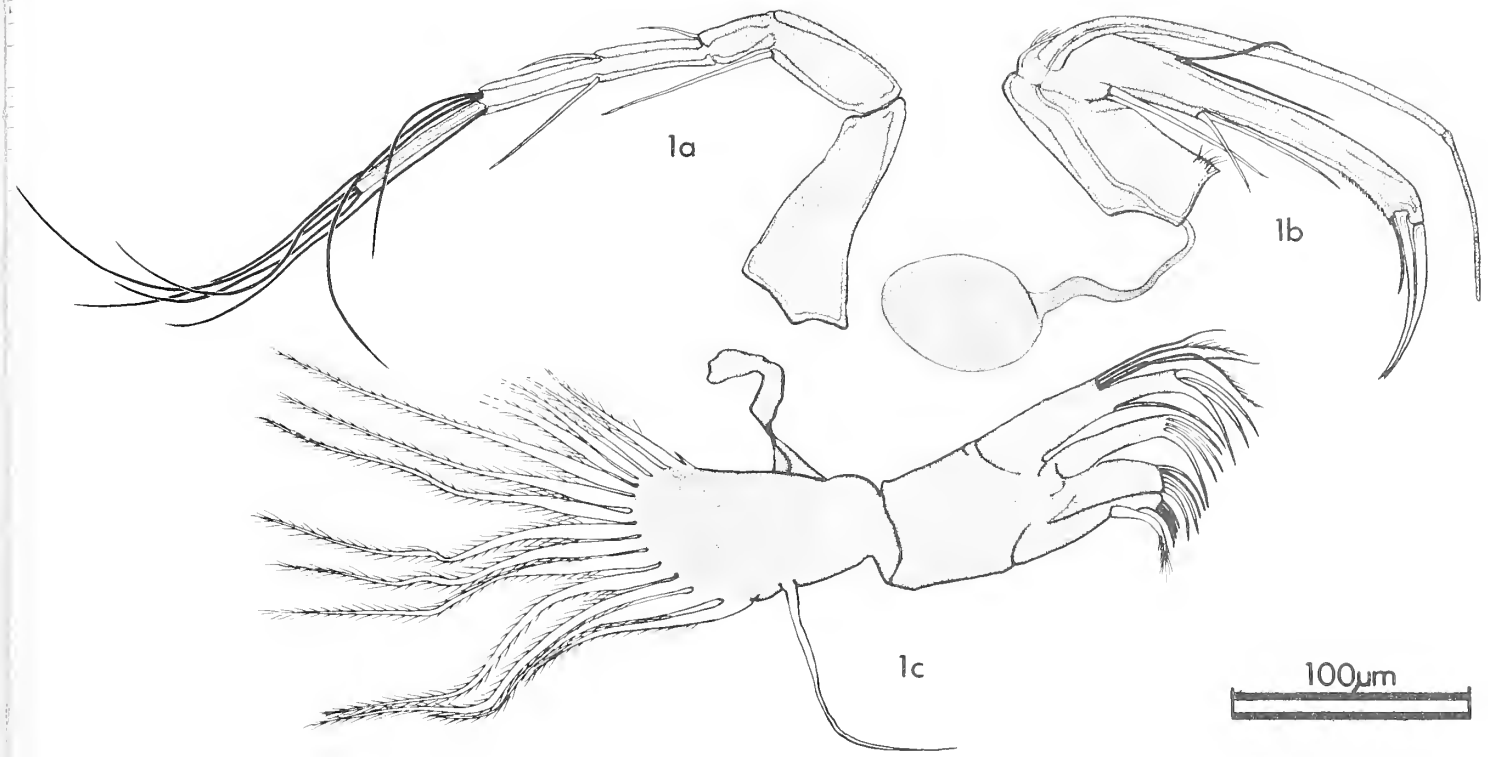
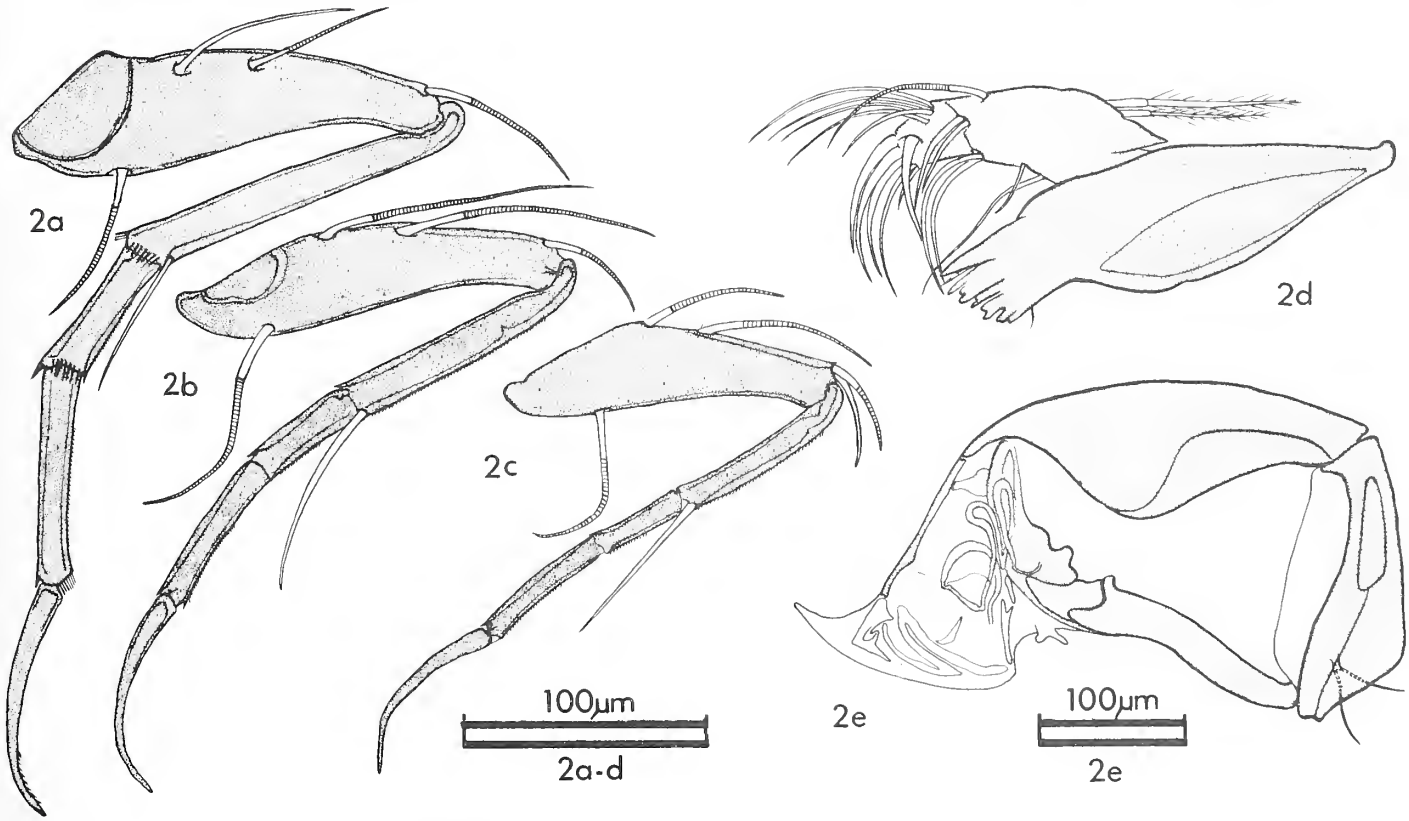


Text-fig. 1. Appendages of *Loxoconcha rhomboidea*. 1a, ♂ lt. first antenna; 1b, ♂ rt. second antenna; 1c, ♀ maxilla.



Text-fig. 2. Appendages of *Loxoconcha rhomboidea*. 2a–c, ♂ rt. legs 1–3; 2d, ♂ mandible; 2e, ♂ lt. copulatory appendage.

595.337.14 (119.9) (262.3:161.016.43+262.2:161.033.34+262.2:161.035.33):551.351+552.513

ON *LOXOCONCHA AFFINIS* (BRADY)

by John Athersuch
(*University of Leicester, England*)

Loxoconcha affinis (Brady, 1866)

1866 *Normania affinis* sp. nov. G. S. Brady, *Trans. zool. Soc. Lond.* **5**, 382, pl. 61, figs. 12a–d.
1868 *Loxoconcha affinis* (Brady); G. S. Brady, *Ann. Mag. nat. Hist.* ser. 4, **2**, 220.
1894 *Loxoconcha impressa* (Baird); G. W. Müller, *Fauna Flora Golf. Neapel* **21**, pl. 28, fig. 1; ?pl. 27, figs. 16, 20; *non* pl. 27, fig. 17, pl. 28, fig. 6.
1912 *Loxoconcha bairdi nom. nov.* (*pro Cythere impressa* Baird, 1850, *non* M'Coy, 1844) G. W. Müller, *Tierreich* **31**, 306, fig. 85.
1942 *Loxoconcha adriatica* sp. nov. W. Klie, *Zool. Anz.* **139**, 67, figs. 1–5.
1975 *Loxoconcha* aff. *L. rhomboidea* (Fischer); H. Uffenorde, *Göttinger Arb. Geol. Paläont.* no. 13, 85, pl. 9, fig. 5.

Lectotype: (here designated). Brady coll., Hancock Museum, Newcastle-upon-Tyne; ♀ LV and RV. No catalogue number, but placed in a separate, labelled slide. [Paralectotype: also on separate, labelled slide in Brady coll.].

Type locality: The Levant; Recent.

Figured specimens: Hancock Museum specimens: Lectotype (♀ LV: Pl. 3, 92, fig. 2), Paralectotype (♀ RV: Pl. 3, 96, fig. 4). Universität Hamburg Zoologisches Museum no. **K30389** (ex-Klie coll. no. **149**) (♂ LV: Pl. 3, 94, figs. 2, 4). Brit. Mus. (Nat. Hist.) nos. **1975.1232** (♂ RV: Pl. 3, 94, fig. 1), **1975.1233** (♀ LV: Pl. 3, 96, fig. 1; Pl. 3, 98, figs. 1, 2, 4), **1975.1234** (♀ RV: Pl. 3, 98, figs. 3, 5), **1975.1235** (♀ RV: Pl. 3, 96, fig. 3), **1975.1236** (juv. –1:

Explanation of Plate 3, 92

Fig. 1, ♀ RV, ext. lat. (**1976.695**, 598 μm long); fig. 2, ♀ LV, ext. lat. (lectotype, 585 μm long); fig. 3, juv. –1 RV, ext. lat. (**1975.1236**, 476 μm long).
Scale A (200 μm; × 110), figs. 1, 2; scale B (200 μm; × 116), fig. 3.

Figured specimens: (contd.) Pl. 3, 92, fig. 3; Pl. 3, 94, fig. 3), **1975.1237** (♂ RV & soft parts: Pl. 3, 96, fig. 2), **1976.695** (♀ RV: Pl. 3, 92, fig. 1). Brady specimens are from sponge sand. Klie specimen coll. alive by K. Viets from algae at Spalato, Yugoslavia; approx. lat. 43°30′N, long. 16°30′E, water depth 3–4m. **1975.1232–1237** and **1976.695** coll. alive from Cyprus by J. Athersuch, autumn 1973. **1975.1232**, **1976.695** associated with sea-grass *Posidonia* in sand, Pyla; approx. lat. 34°57′N, long. 33°51′E, water temp. 25·5° C, depth 23m, salinity 39‰, O_2 106%, pH 8·1. **1975.1233–1235** from algae on rocks, Kyrenia; approx. lat. 33°19′N, long. 35°20′E, water temp. 27° C, depth 2–3m, salinity 39‰. **1975.1236**, **1237** associated with *Posidonia* in sand, Akrotiri Bay; approx. lat. 34°33′N, long. 33°02′E, water temp. 25° C, depth 20m, salinity 39‰, O_2 96%.

Diagnosis: Both sexes have maximum width of carapace behind the mid-point. Dorsal margin of female gently arched. Males more elongate. Fossae subrounded.

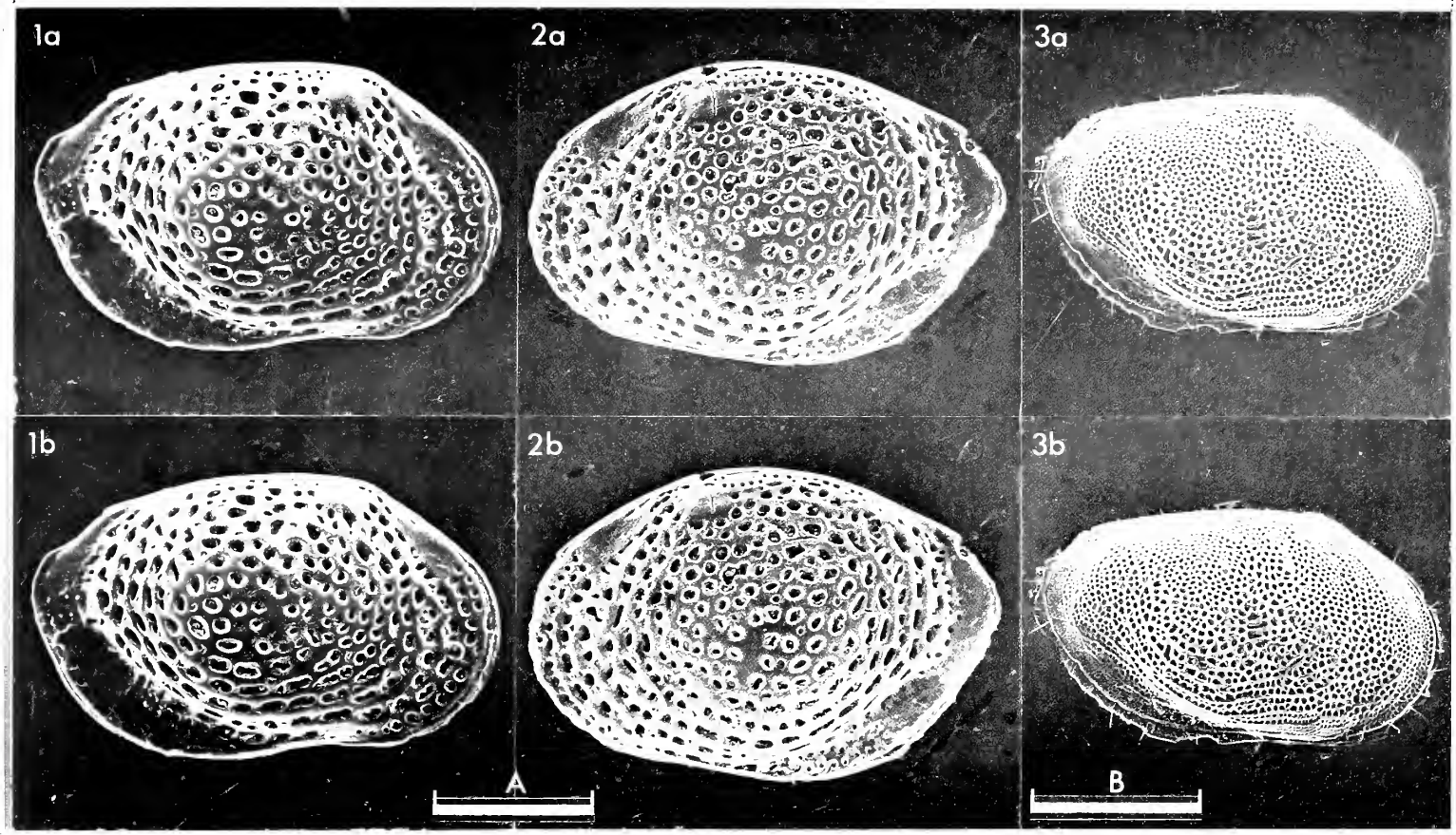
Remarks: *L. affinis* differs from *L. rhomboidea* (Fischer, 1855) (see *Stereo-Atlas of Ostracod Shells* 3, 1976) in details of the male copulatory appendages, in having a less arched female dorsal margin, and a less developed anteroventral oral concavity. *L. affinis* characteristically has coarser ornament, is smaller, and its maximum width is sited further back.

G.W. Müller claimed (1894) that large and small forms of *L. impressa* (Baird) occurred in the Bay of Naples, Italy, but considered that these were only local varieties. It seems probable from his description and illustrations that the smaller form was *L. affinis* and that the larger was *L. rhomboidea*. Müller later (1912) suggested *L. bairdi* as a new name for *L. impressa* (Baird) (primary homonym of *C. impressa* M'Coy, 1844). However, his redescription and illustration (1912, 306, fig. 85) are undoubtedly of *L. affinis*.

Distribution: Many previous Mediterranean records of *L. impressa*, *L. bairdi* and *L. rhomboidea* may in fact refer to *L. affinis*. The following records can be confirmed: Recent from Adriatic (Klie, op. cit.; Uffenorde, op. cit.), Cyprus (herein), Tenedos (= Bozcaada) and Levant (Brady, op. cit.), Bay of Naples, Italy (Müller, 1894), Lago del Fusaro, Naples, Italy (McKenzie, 1963, *Annuar. Ist. Mus. Zool. Univ. Napoli* **15**).

Explanation of Plate 3, 94

Fig. 1, ♂ RV, ext. lat. (**1975.1232**, 622 μm long); fig. 2, ♂ LV, ext. lat. (**K30389**, 671 μm long); fig. 3, juv. –1, detail of ornament (**1975.1236**); fig. 4, ♂ LV, detail of ornament (**K30389**).
Scale A (200 μm; × 105), figs. 1, 2; scale B (25 μm; × 580), fig. 3; scale C (25 μm; × 400), fig. 4.


1a
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1b
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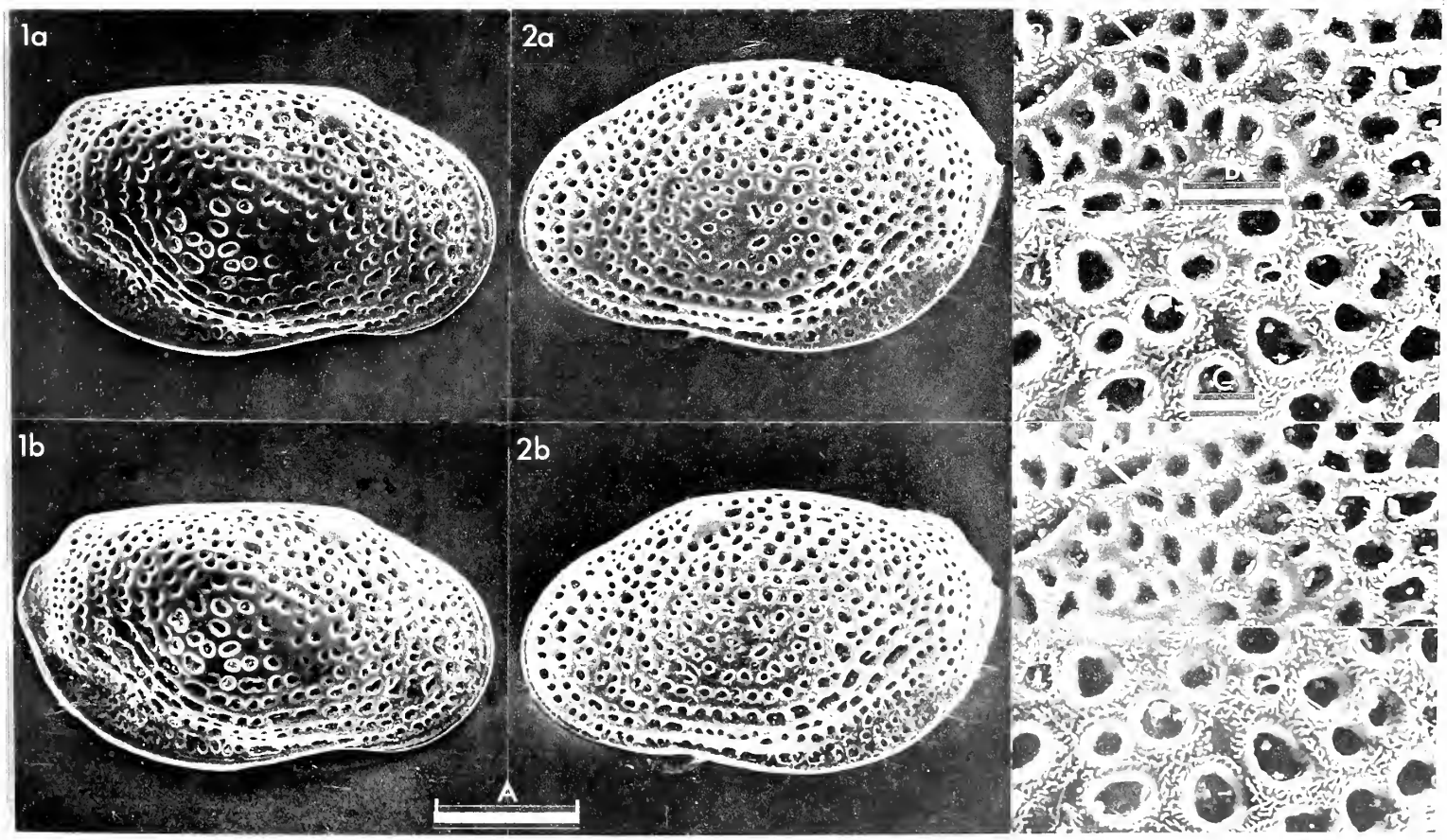
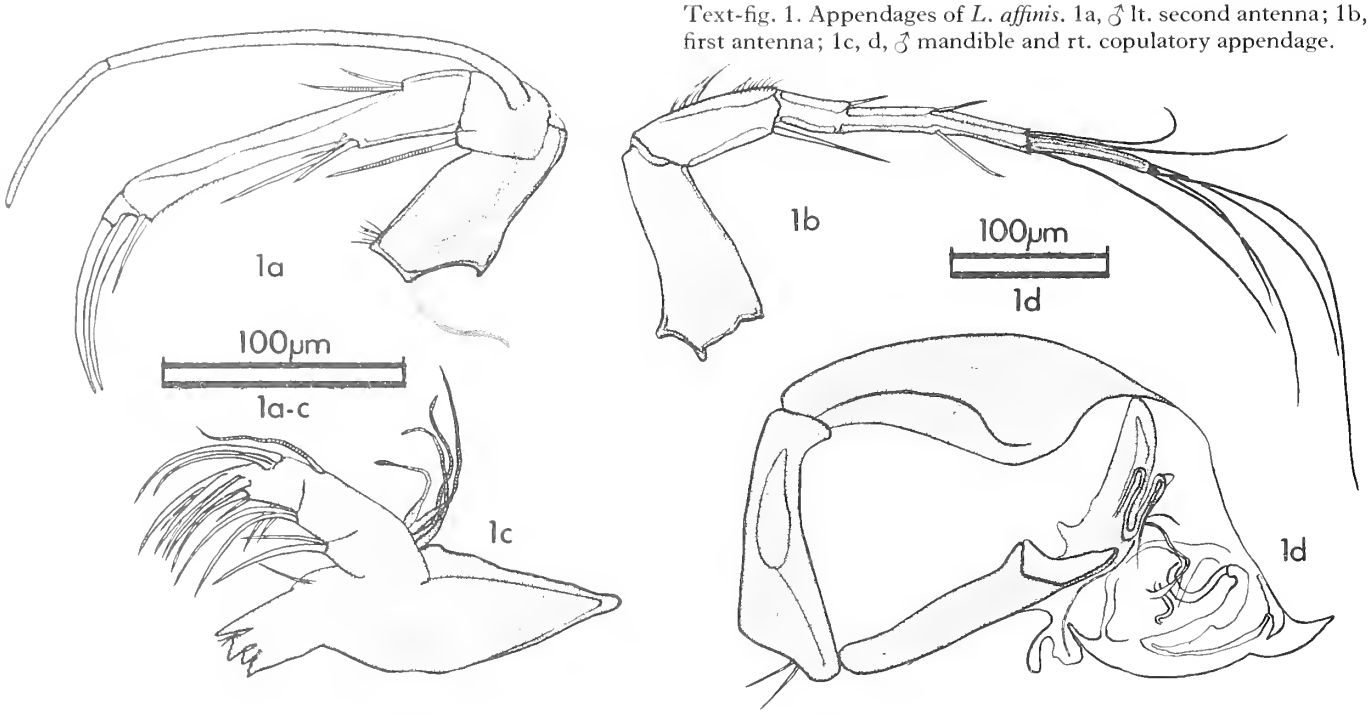
3b
A
B

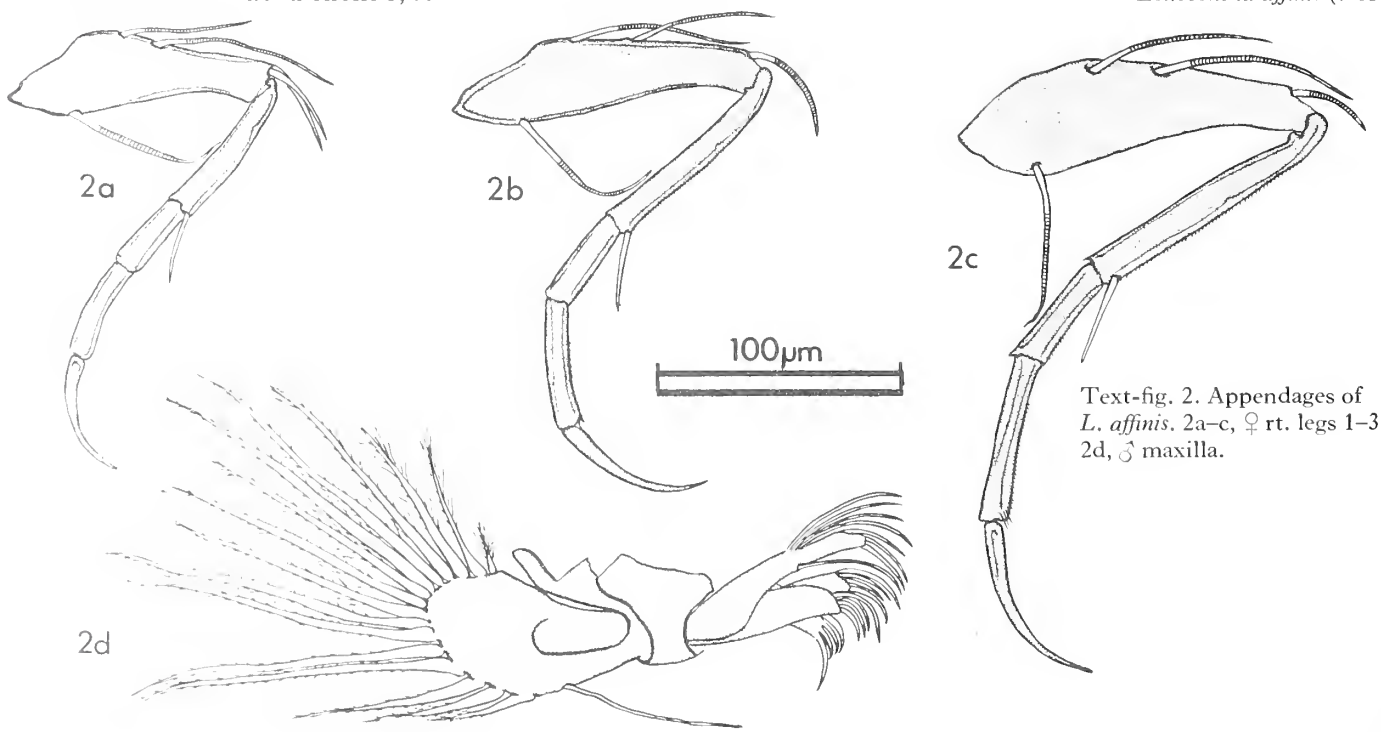

1a
2a
D
C
1b
2b
A

Text-fig. 1. Appendages of *L. affinis*. 1a, ♂ lt. second antenna; 1b, ♀ rt. first antenna; 1c, d, ♂ mandible and rt. copulatory appendage.



Explanation of Plate 3, 96

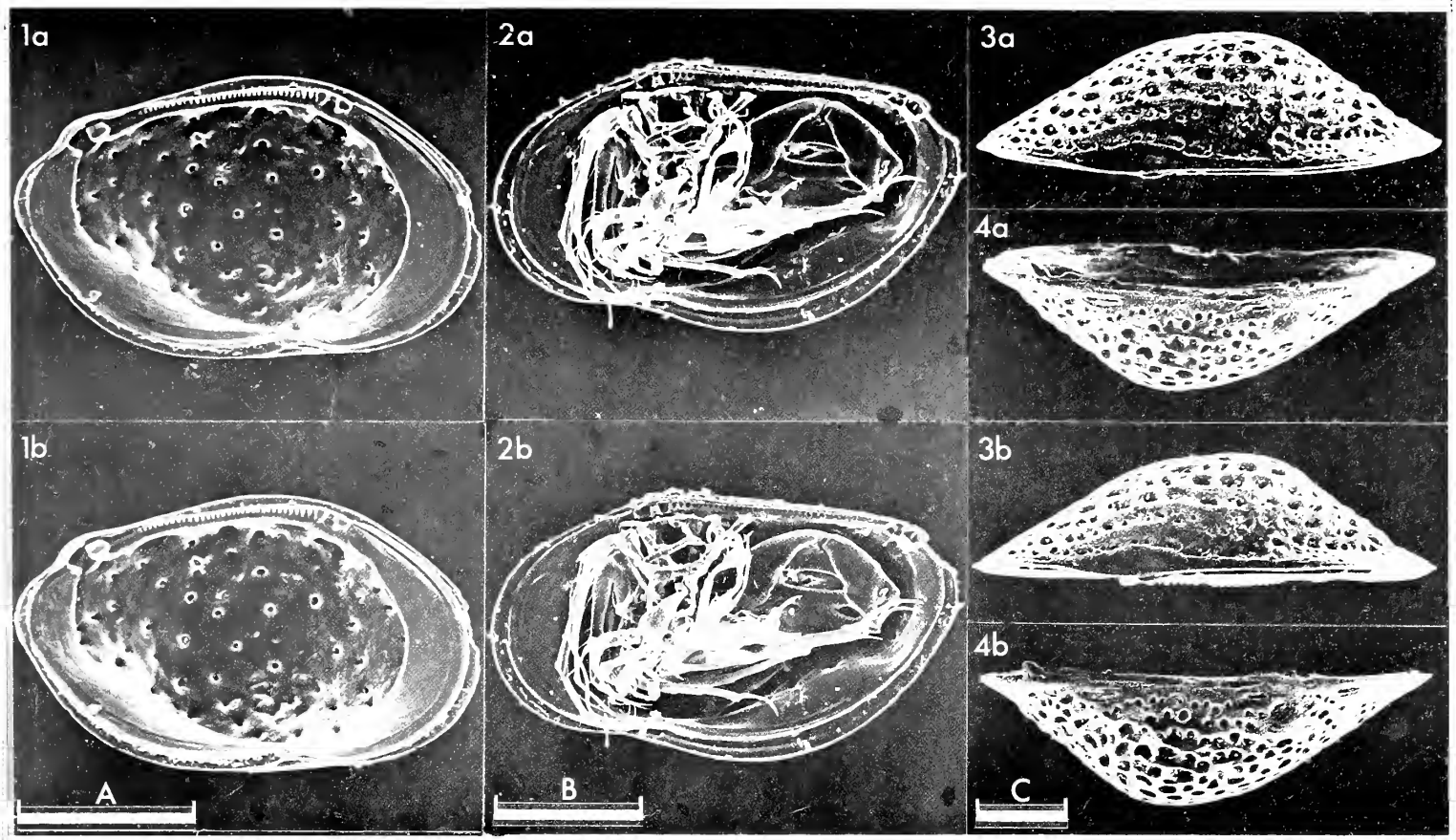
Fig. 1, ♀ LV, int. lat. (**1975.1233**, 524 µm long); fig. 2, ♂ RV, int. lat. showing soft parts (**1975.1237**, 610 µm long); fig. 3, ♀ RV, vent. (**1975.1235**, 537 µm long); fig. 4, ♀ RV, dors. (paralectotype, 537 µm long).
Scale A (200 µm; × 124), fig. 1; scale B (200 µm; × 105), fig. 2; scale C (100 µm; × 120), figs. 3, 4.



Text-fig. 2. Appendages of *L. affinis*. 2a–c, ♀ rt. legs 1–3; 2d, ♂ maxilla.

Explanation of Plate 3, 98

Fig. 1, ♀ LV, int. lat. musc. sc. (**1975.1233**); figs. 2, 4, ♀ LV, terminal elements of hinge (**1975.1233**); figs. 3, 5, ♀ RV, terminal elements of hinge (**1975.1234**).
Scale A (25 µm; × 435), fig. 1; scale B (50 µm; × 496), figs. 2–5.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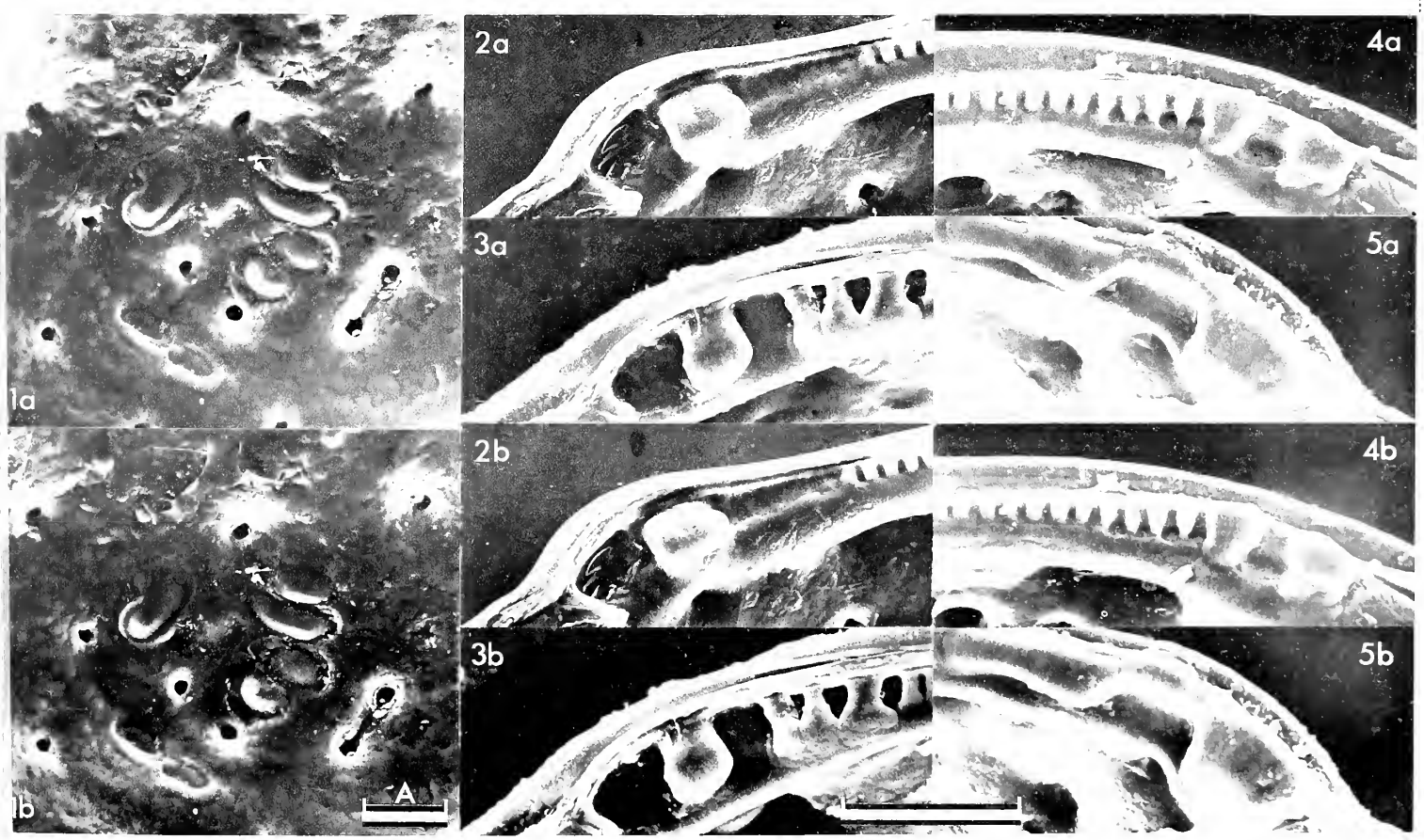
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4a
5a
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5b

595.337.14 (119.9) (261.268:162.002.50+262.13:161.014.41+261.28:162.002.44):551.313.1

ON *LOXOCONCHA ELLIPTICA* BRADY

by John Athersuch and John E. Whittaker
(*University of Leicester, England, and British Museum* [*Nat. Hist.*], *London, England*)

Loxoconcha elliptica Brady, 1868

1853 *Cythere viridis* O. F. Müller; W. Liljeborg, *De Crustaceis ex ordinibus tribus: Cladocera, Ostracoda et Copepoda, in Scania occurrentibus*, Lund, 168, pl. 18, figs. 4–6, 8–13, pl. 19, figs. 3–5 (*non C. viridis* O. F. Müller, 1785).
1868 *Loxoconcha elliptica* sp. nov. G. S. Brady, *Trans. Linn. Soc. Lond.* **26**, 435, pl. 27, figs. 38, 39, 45–48, pl. 40, figs. 3a, b.
1928 *Cythere* sp.; H. Gauthier, *Récherches sur la faune des eaux continentales de l'Algérie et de la Tunisie*, Algiers, 385, text-figs. 59A–F, 60A–H.
1929 *Loxoconcha gauthieri* sp. nov. W. Klie, *Z. wiss. Zool.* **134**, 292, text-figs. 23–25.
non 1941 *Loxoconcha elliptica* sp. nov. J. H. Bonnema, *Natuurh. Maandbl.*, Maastricht **30**, 26, pl. 6, figs. 6–11.
non 1972 *Loxoconcha elliptica* Brady; H. Uffenorde, *Göttinger Arb. Geol. Paläont.* **13**, 84, pl. 9, fig. 3.

Lectotype: (here designated). Brady coll., Hancock Museum, Newcastle-upon-Tyne; ♀ carapace. No catalogue number, but placed in a separate, labelled slide. Taken from a slide originally labelled *Normania elliptica* (Brady), subsequently altered to *N. viridis*.

Type locality: Arnold's Pool (=Vale Pond), Guernsey, Channel Islands; approx. lat. 45°30′N, long. 2°37′W. Recent, brackish water.

Figured specimens: Hancock Mus. specimen: Lectotype (♀ car.: Pl. **3**, 100, fig. 1). Brit. Mus. (Nat. Hist.) nos. **1975.958** (♂ car.: Pl. **3**, 100, fig. 2), **1975.959** (juv. –1 car.: Pl. **3**, 100, fig. 3), **1975.960** (♀ car.: Pl. **3**, 102, fig. 1),

Explanation of Plate 3, 100

Fig. 1, ♀ car., ext. rt. lat. (lectotype, 590 μm long); fig. 2, ♂ car., ext. rt. lat. (**1975.958**, 650 μm long); fig. 3, juv. –1 car., ext. rt. lat. (**1975.959**, 500 μm long).
Scale A (250 μm; × 100), figs. 1–3.

Figured specimens (contd.): **1975.961** (♂ car.: Pl. **3**, 102, fig. 2), **1975.962** (♂ LV: Pl. **3**, 102, fig. 3), **1975.963** (♀ LV: Pl. **3**, 104, figs. 1, 3, 5), **1975.964** (♀ RV: Pl. **3**, 104, figs. 2, 4), **1975.965** (♂ RV: Pl. **3**, 106, fig. 3), **1975.966** (♀ car.: Pl. **3**, 106, fig. 1), **1975.967** (♂ LV: Pl. **3**, 106, fig. 2). Lectotype coll. alive by A. M. Norman. **1975.958–961**, **963**, **964**, **966**, coll. alive from *Fucus ceranoides* in shallow, brackish water, Mother Siller's Channel, Christchurch Harbour, Hampshire, S England; approx. lat. 50°43′N, long. 1°45′W, water temp. 22°C, salinity 7·4‰. **1975.965, 967** (also living) from *Enteromorpha* at La Teste de Buch, S Arcachon Basin, SW France; approx. lat. 44°39′N, long. 1°09′W. Both localities sampled by J. E. Whittaker, August 1969 and 1970 respectively. **1975.962** (ex-slide no. **1972.3.2.8**) coll. by K. G. McKenzie from Lago del Fusaro, near Naples, W Italy; approx. lat. 41°10′N, long. 14°04′E.

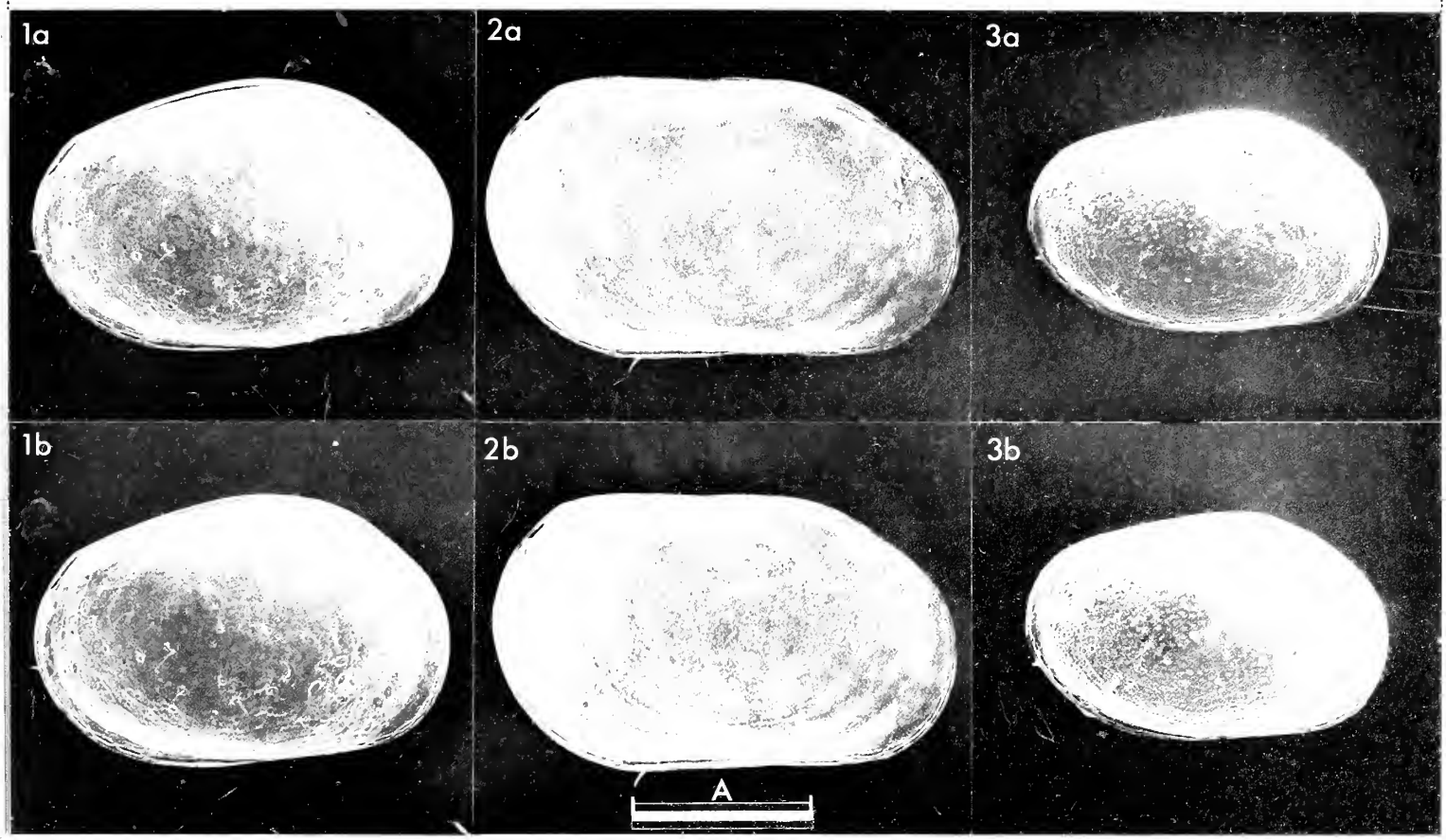
Diagnosis: Ornament of valves subdued. Flattened posteroventral marginal border very narrow for genus. No caudal process. Strongly dimorphic; shape of male carapace and copulatory appendages distinctive.

Remarks: The best extant syntype specimens of *L. elliptica* were found to be those from the Guernsey locality. In NW Europe this species, as late as 1938 (Klie, *Tierwelt Dtl.* **34**, 201), was considered synonymous with *L. rhomboidea* (Fischer) and in earlier times often confused with *Hirschmannia viridis* (O. F. Müller). Both latter species have recently been rehabilitated (see *Stereo-Atlas of Ostracod Shells*, **3**, 81–90, 1976, and **2**, 149–156, 1975, respectively).

Distribution: Records from the Mediterranean coast of *L. elliptica* are often incorrect (e.g. Uffenorde, op. cit.), but Gauthier's excellent figures of his *Cythere* sp. (=*L. gautheri* Klie) prove its occurrence in N Africa, while material from the shore of W Italy is illustrated herein. *L. elliptica* is invariably a brackish water species confined to estuaries, lagoons and pools throughout NW Europe and probably the whole of the Mediterranean. It is known from the Pleistocene of Britain, but earlier occurrences are not known to us.

Explanation of Plate 3, 102

Fig. 1, ♀ car., ext. vent. (**1975.960**, 570 μm long); fig. 2, ♂ car., ext. dors. (**1975.961**, 650 μm long); fig. 3, ♂ LV, ext. lat. (**1975.962**, 610 μm long).
Scale A (250 μm; × 100), figs. 1–3.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1b
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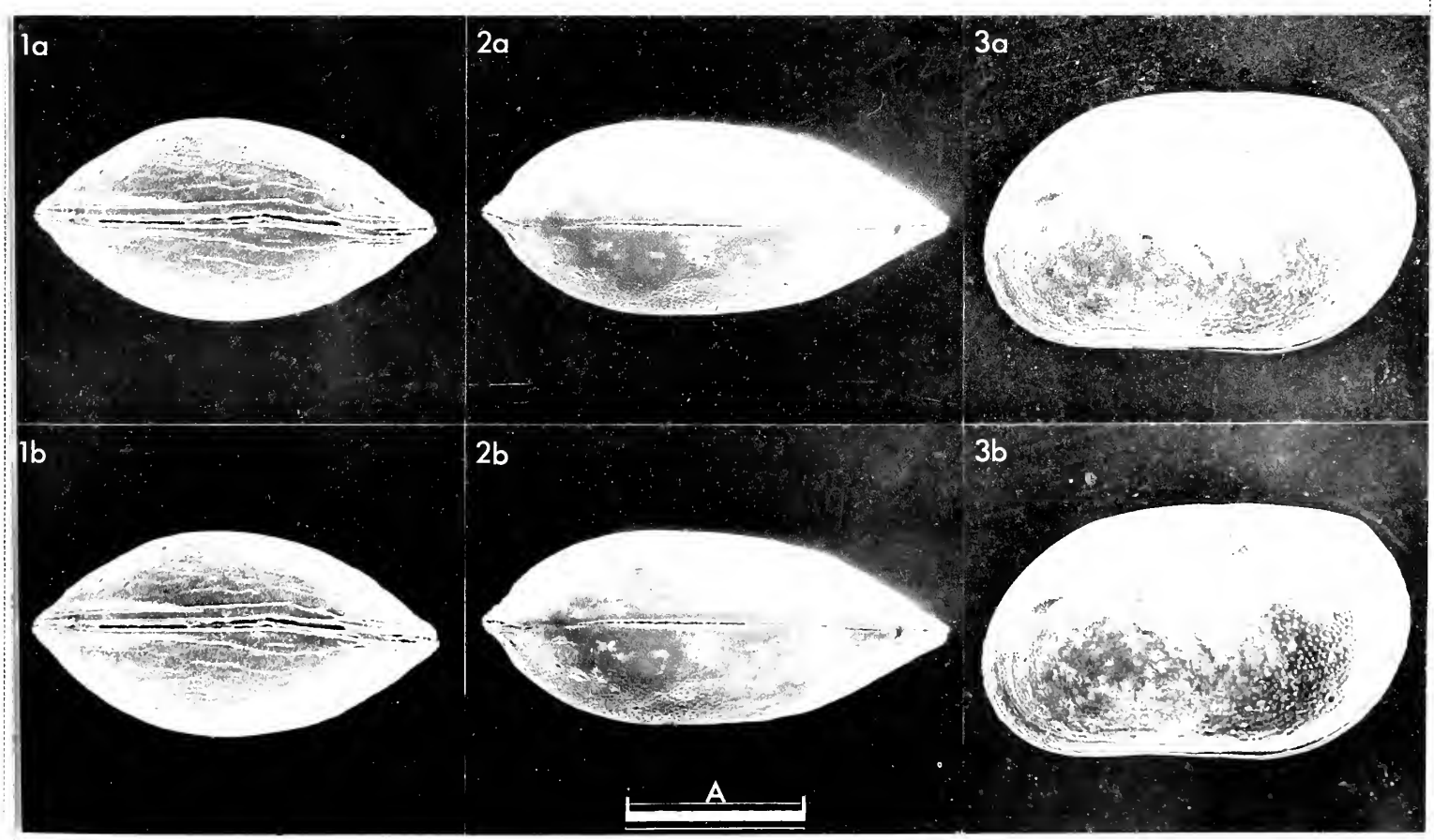
A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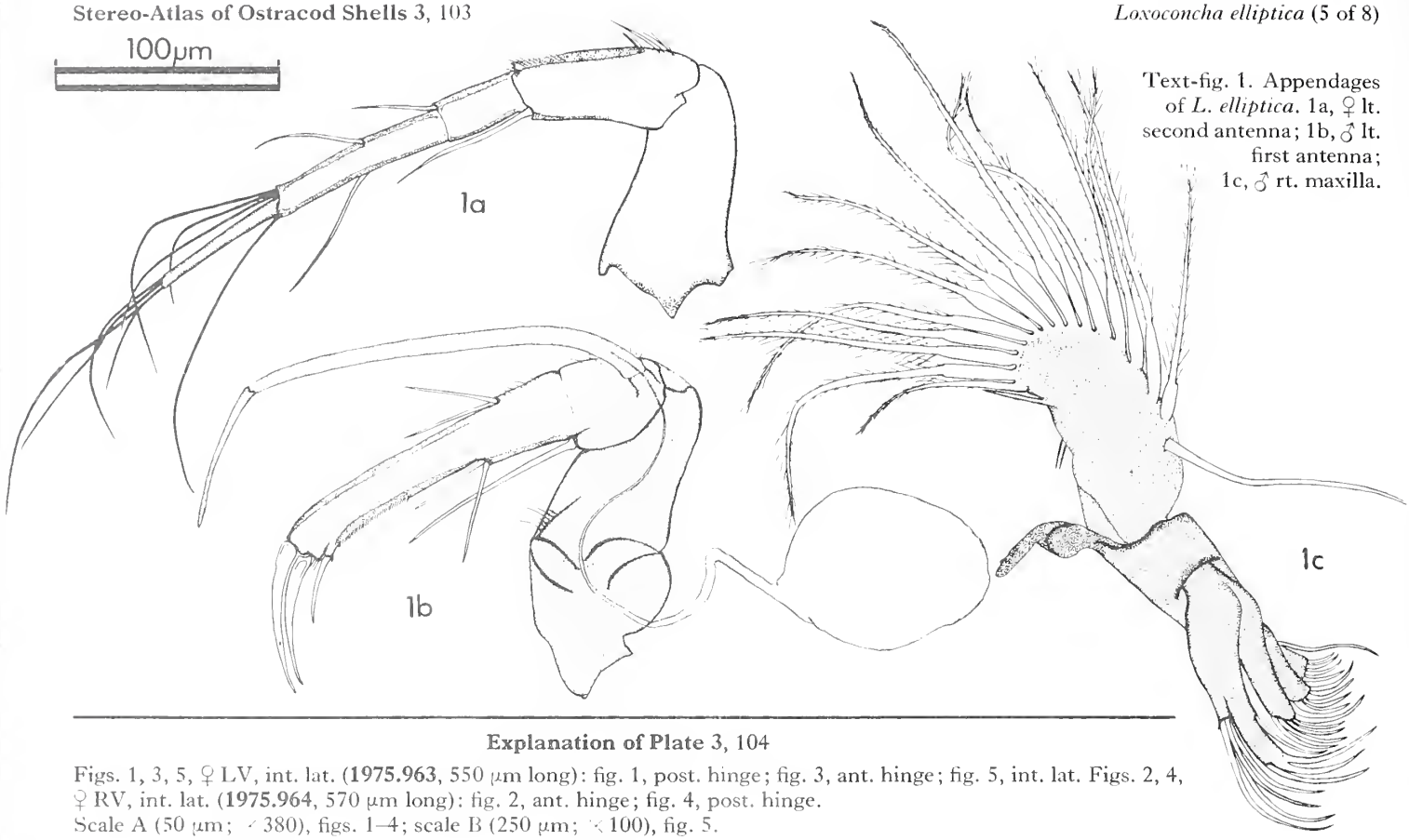
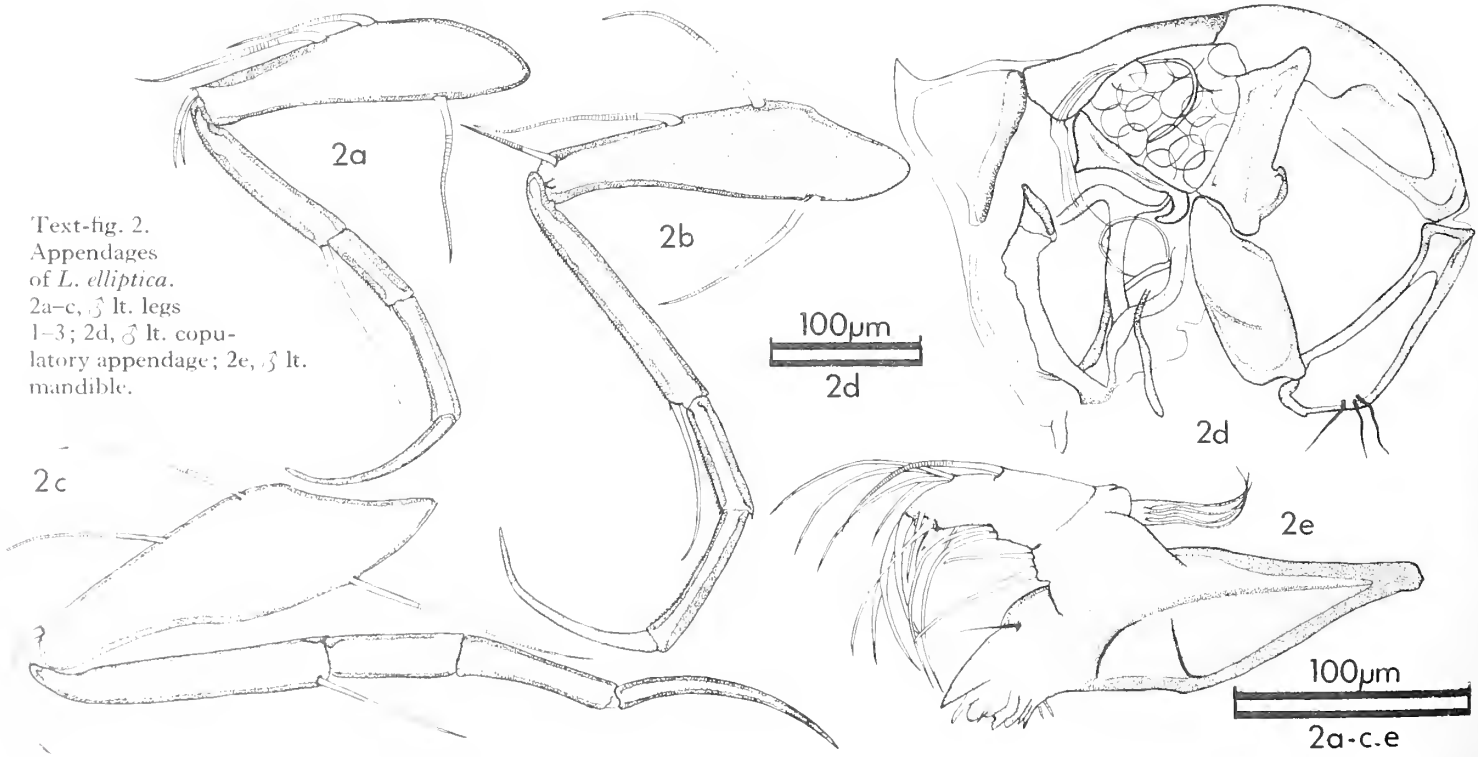


Text-fig. 1. Appendages of *L. elliptica*. 1a, ♀ lt. second antenna; 1b, ♂ lt. first antenna; 1c, ♂ rt. maxilla.

Explanation of Plate 3, 104

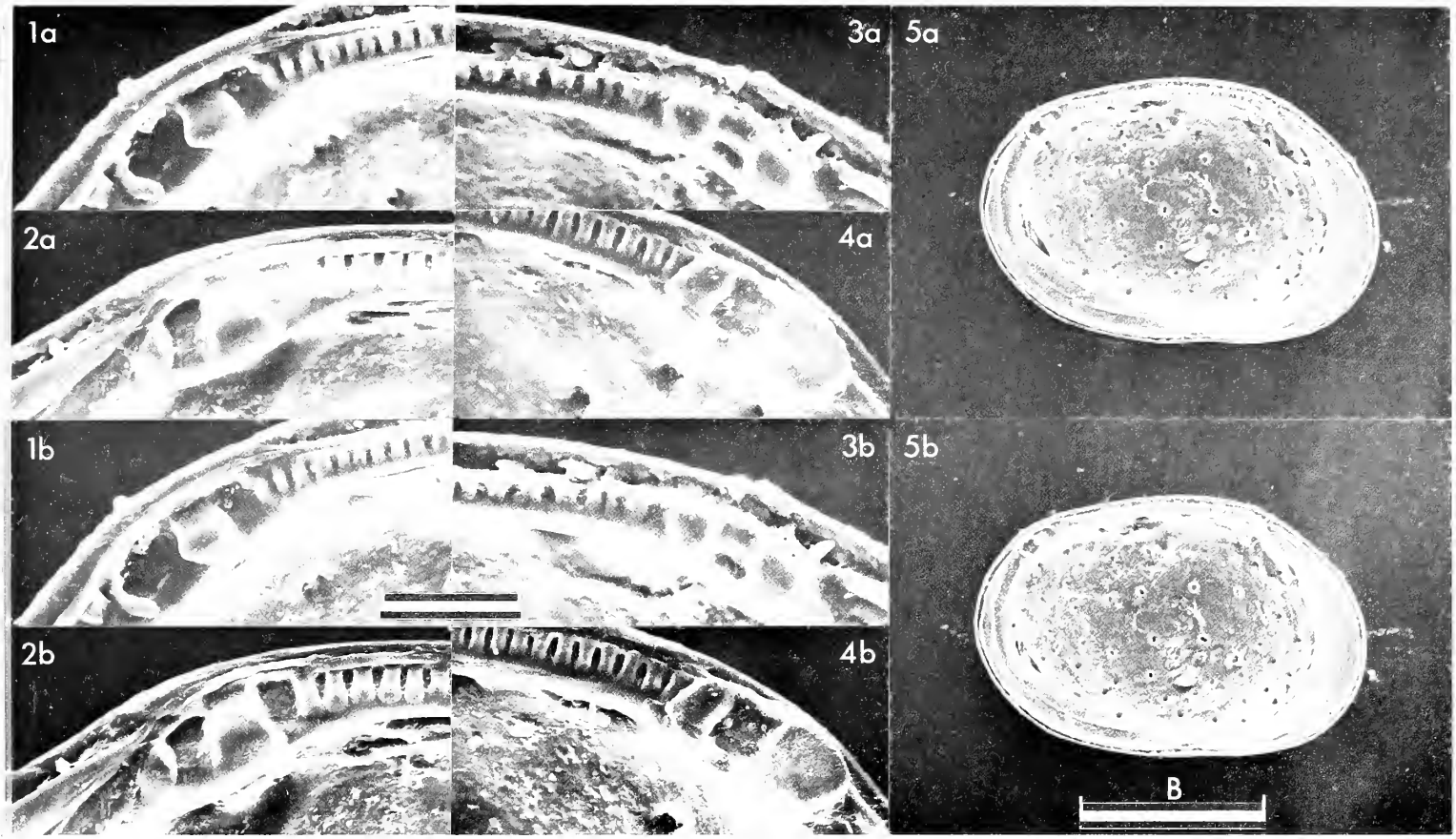
Figs. 1, 3, 5, ♀ LV, int. lat. (**1975.963**, 550 µm long): fig. 1, post. hinge; fig. 3, ant. hinge; fig. 5, int. lat. Figs. 2, 4, ♀ RV, int. lat. (**1975.964**, 570 µm long): fig. 2, ant. hinge; fig. 4, post. hinge.
Scale A (50 µm; × 380), figs. 1–4; scale B (250 µm; × 100), fig. 5.



Text-fig. 2. Appendages of *L. elliptica*. 2a–c, ♂ lt. legs 1–3; 2d, ♂ lt. copulatory appendage; 2e, ♂ lt. mandible.

Explanation of Plate 3, 106

Fig. 1, ♀ car., detail of ant. dors. region showing sieve-pores (**1975.966**, 590 µm long); fig. 2, ♂ car., detail of ant. dors. region showing fine ornament & sieve-pores (**1975.967**, 620 µm long); fig. 3, ♂ RV, int. lat. showing soft parts (**1975.965**, 630 µm long).
Scale A (25 µm; × 700), fig. 1; scale B (10 µm; × 1100), fig. 2; scale C (250 µm; × 100), fig. 3.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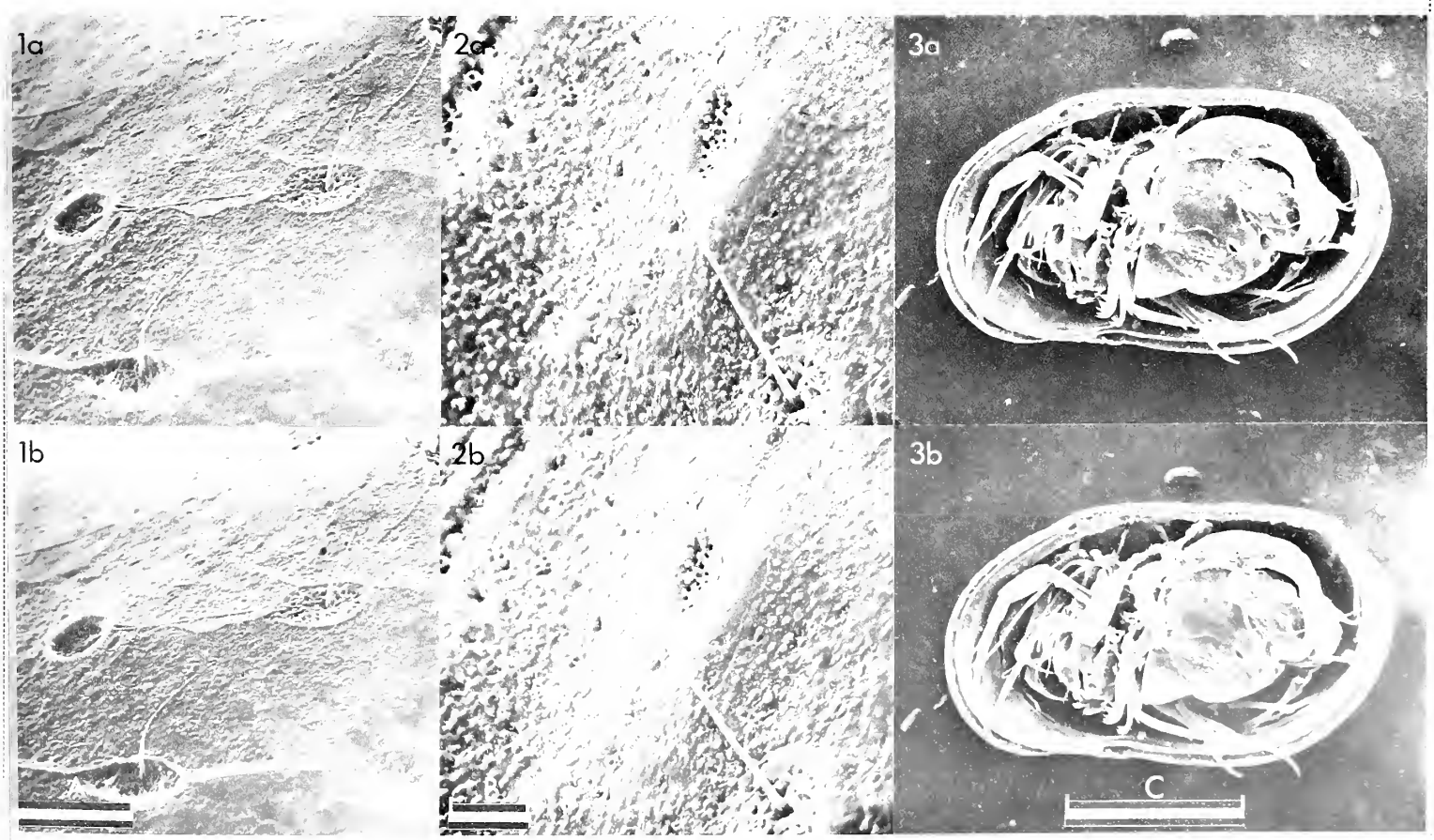
2b
4b
B


1a
2a
3a
1b
2b
3b
C

595.337.14 (119.9) (262.2:161.033.35 + 262.3:161.012.45):551.351 + 552.51

ON *LOXOCONCHA RUBRITINCTA* RUGGIERI

by John Athersuch
(*University of Leicester, England*)

Loxoconcha rubritincta Ruggieri, 1964

1952 *Loxoconcha guttata* (Norman); G. Ruggieri, *Giorn. Geologia* **2**, 74, pl. 4, figs. 7–9 (*non Cythere guttata* Norman, 1865).
1964 *Loxoconcha rubritincta* sp. nov. G. Ruggieri, *Pubbl. Staz. zool. Napoli* **33**, 521, figs. 8–10.
1968 *Loxoconcha rubritincta* Ruggieri; M. Masoli, *Mem. Mus. Trident. Sci. Nat.* **17**, 54, pl. 3, fig. 29, pl. 12, figs. 185–187.
1975 *Loxoconcha geometrica* sp. nov. G. Bonaduce, G. Ciampo & M. Masoli, *Pubbl. Staz. zool. Napoli* **40**, suppl. 1, 107, pl. 63, figs. 6–13.
1975 *Loxoconcha rubritincta* Ruggieri; G. Bonaduce, G. Ciampo & M. Masoli, *ibid.*, 110, pl. 63, figs. 1–5.

Holotype: (not figured herein). Ruggieri coll. no. **1464**, Institute of Geology of the University, Palermo, Italy; ♂ LV (*fide* Ruggieri, 1964).

Type locality: Venice beach, Italy; Recent.

Figured specimens: Brit. Mus. (Nat. Hist.) nos. **1976.732** (♀ LV: Pl. **3**, 108, fig. 1), **1976.733** (♂ LV: Pl. **3**, 108, fig. 2), **1976.734** (♀ RV: Pl. **3**, 108, fig. 3), **1976.735** (♂ car.: Pl. **3**, 112, figs. 4, 7), **1976.736** (♂ LV: Pl. **3**, 112, fig. 2; Pl. **3**, 110, fig. 3; Pl. **3**, 114, figs. 2, 4), **1976.737** (♂ LV: Pl. **3**, 112, fig. 1; Pl. **3**, 110, fig. 4), **1976.738** (♂ LV: Pl. **3**, 112, fig. 3), **1976.739** (♀ RV: Pl. **3**, 112, fig. 5), **1976.740** (♂ RV: Pl. **3**, 112, fig. 6; Pl. **3**, 114, figs. 1, 3, 5), **1976.741** (♂ car.: Pl. **3**, 110, fig. 2), **1976.742** (♀ car.: Pl. **3**, 110, fig. 1). **1976.735** coll. alive by J. Athersuch during autumn 1973 off Kyrenia, Cyprus; approx. lat.

Explanation of Plate 3, 108

Fig. 1, ♀ LV, ext. lat. (**1976.732**, 561 μm long); fig. 2, ♂ LV, ext. lat. (**1976.733**, 659 μm long); fig. 3, ♂ RV, detail of ornament (**1976.734**, 524 μm long).
Scale A (250 μm; × 90), figs. 1, 2; scale B (50 μm; × 673), fig. 3.

Figured specimens (contd.): 35°21′N, long. 33°18′E, water temp. 26 C, depth 4m, salinity 30‰; in coarse sand. **1976.740** taken from beach sand coll. by Prof. P. C. Sylvester-Bradley from Dhavlos Bay, Cyprus, during September 1972; approx. lat. 35°25′N, long. 33°55′E. **1976.734**, **738**, **739**, **741**, **742** were associated with sand at 0–11m at other localities off Cyprus. **1976.736**, **737** coll. by Dr G. Bonaduce from the SE coast of Italy. **1976.732**, **733** coll. by Prof. G. Ruggieri from the type locality in beach sand; approx. lat. 45°24′N, long. 12°15′E. Text-figs. 4, 5 are based on **1976.735**.

Diagnosis: Ornament varying from foveolae to large, deep, caperate funnel-shaped fossae. Male copulatory appendages distinctive.

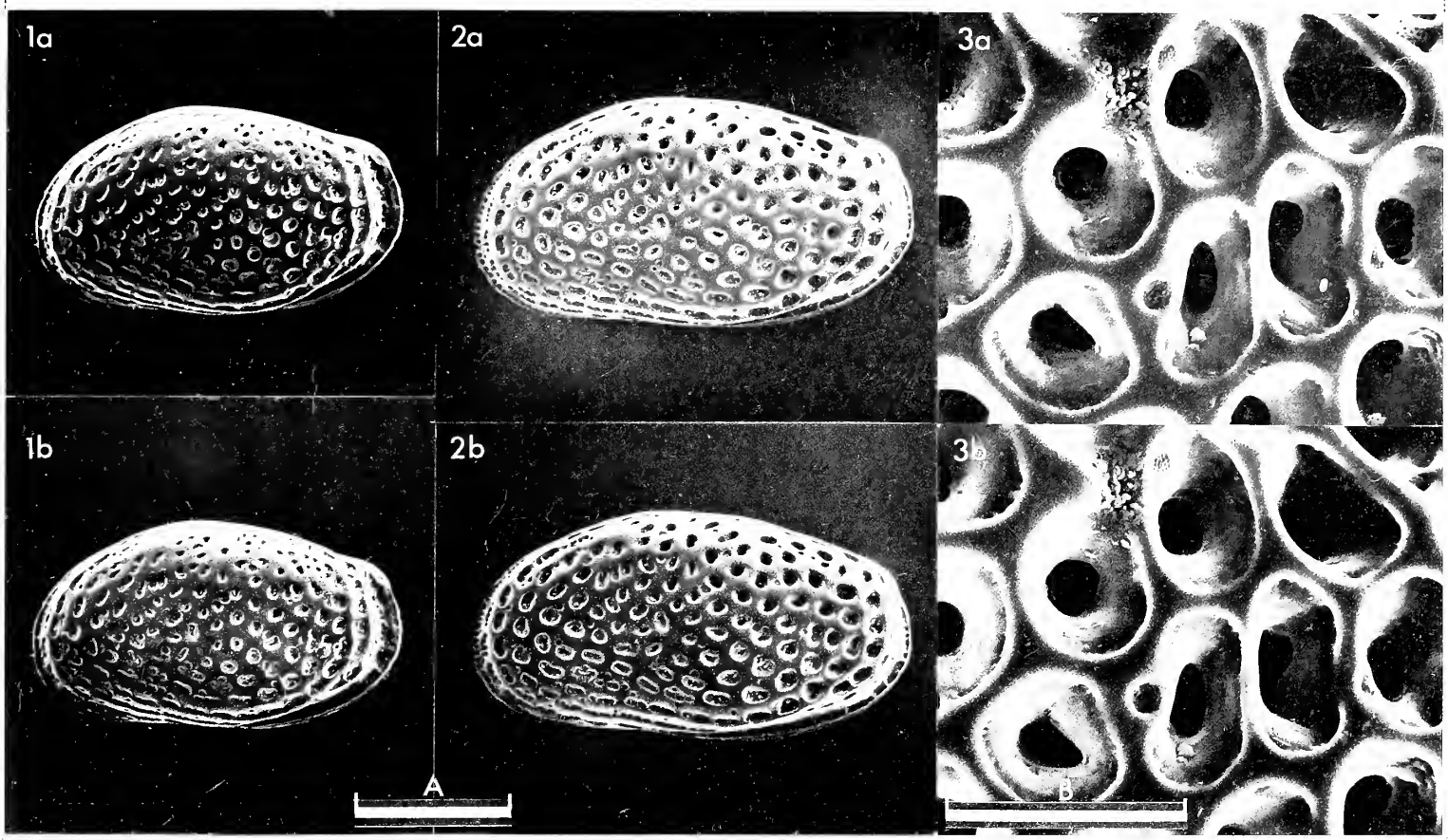
Remarks: The specimens from Italy show great variation in the degree of foveolation and in the number and size of the fossae. The specimens from Cyprus have consistently the largest funnel pores and the males have straighter hingelines than the Italian specimens. Both forms are here regarded as conspecific although considered as distinct species by Bonaduce, Ciampo & Masoli (1975). Identical soft parts have been found in the specimens from SE Italy and from Cyprus. Finely ornamented specimens tend to possess foveolae in groups which correspond to sites occupied by larger fossae in the more coarsely ornamented forms (see Text-figs. 1–3). Males more elongate and less tumid than females.

L. angustata Brady, 1869, could be considered as a possible senior synonym of *L. rubritincta*. The types are not known and are presumed lost, and the original illustrations and description are so poor that I regard *L. angustata* as a *nomen dubium*.

Distribution: Recent, marine: Italy and Cyprus (herein); Venice, Italy (Ruggieri, 1952; Masoli, op. cit.); Tunisia (author's coll.).

Explanation of Plate 3, 110

Fig. 1, ♀ car., ext. vent. (**1976.742**, 549 μm long); fig. 2, ♂ car., ext. dors. (**1976.741**, 683 μm long); fig. 3, ♂ LV, ext. dors. (**1976.736**, 671 μm long); fig. 4, ♀ LV, ext. dors. (**1976.737**, 683 μm long).
Scale A (250 μm; × 90), figs. 1–4.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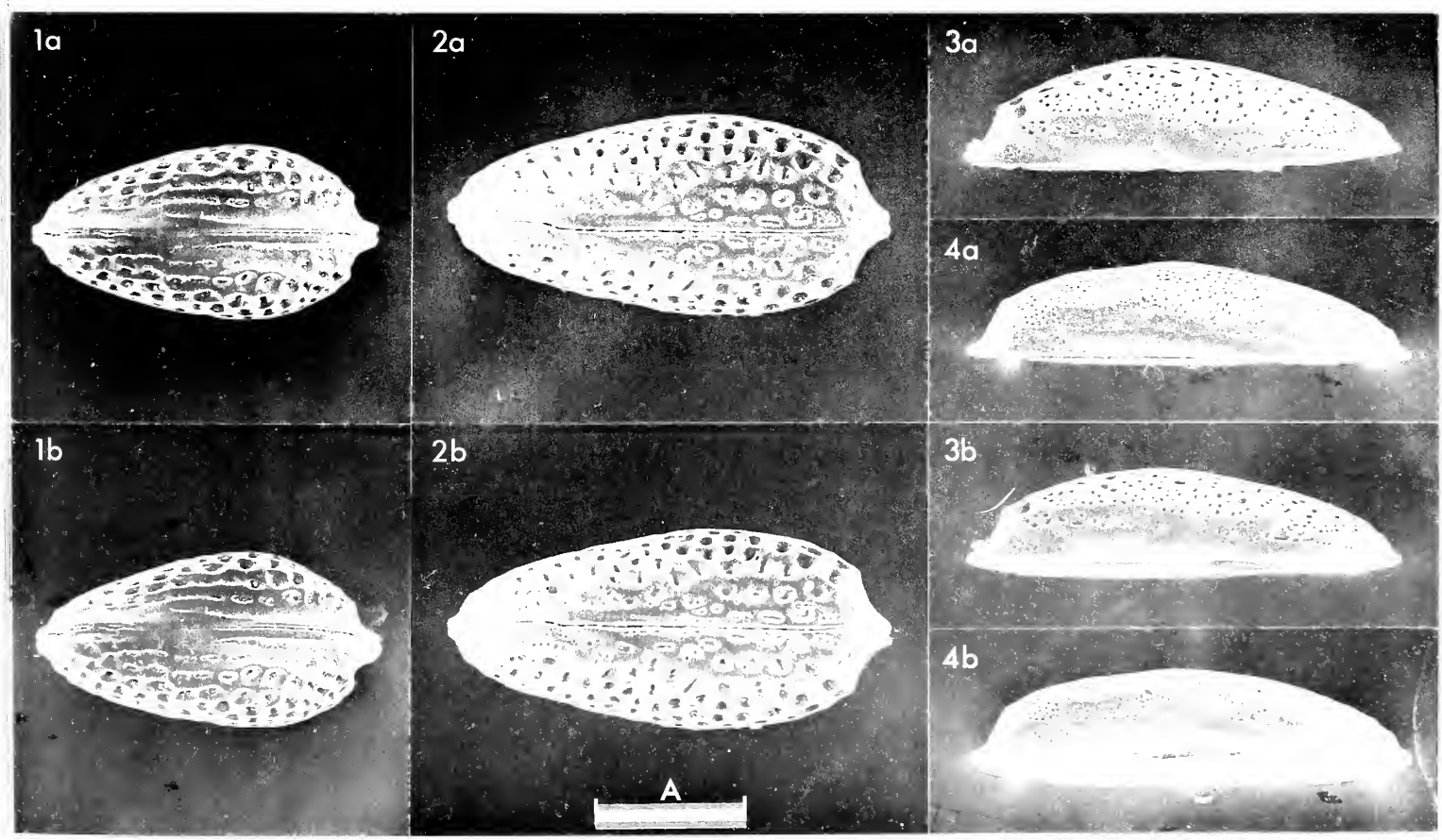
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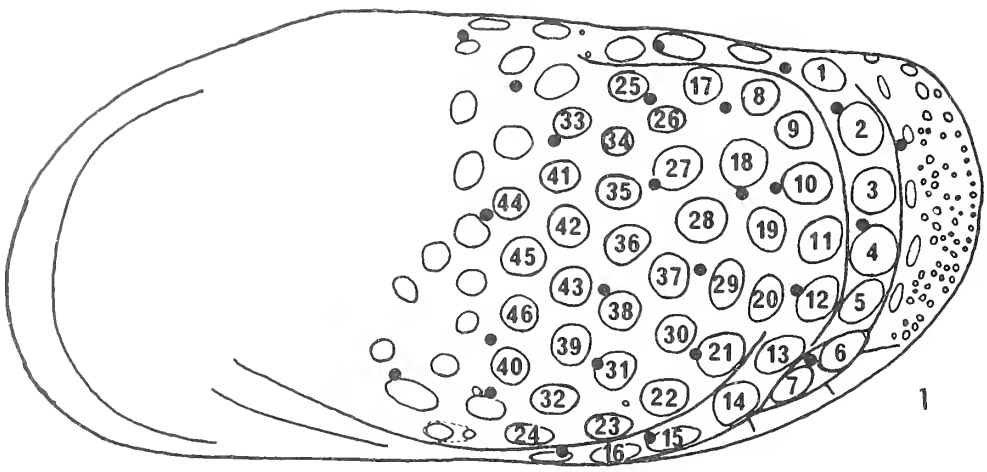
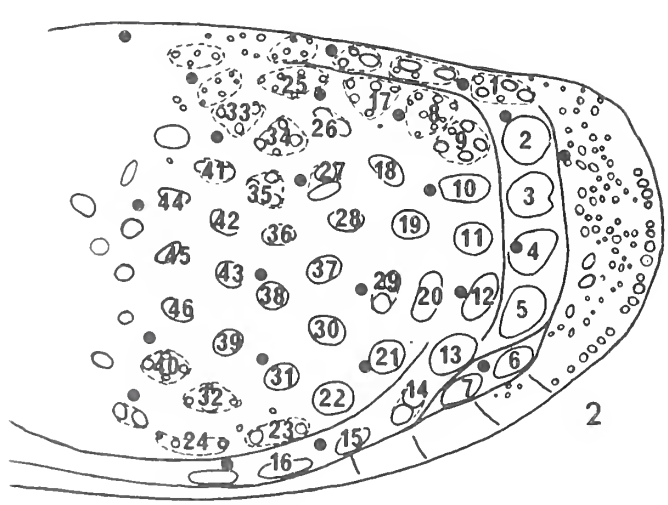
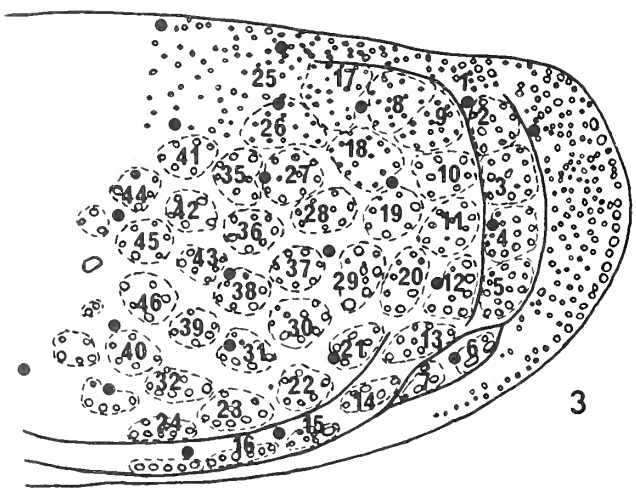


Text-fig. 1. Distribution of fossae and foveolae in *L. rubritincta*, post. ♂ LV (**1976.738**). See Pl. **3**, 112, fig. 3. Circles represent fossa and foveolae, black dots sieve pores.

Explanation of Plate 3, 112

Fig. 1, ♂ LV, ext. lat. (**1976.737**, 683 μm long); fig. 2, ♂ LV, ext. lat. (**1976.736**, 671 μm long); fig. 3, ♂ LV, ext. lat. (**1976.738**, 671 μm long); fig. 4, ♂ RV, ext. lat. (**1976.735**, 646 μm long); fig. 5, ♀ RV, int. lat. (**1976.739**, 537 μm long); fig. 6, ♂ RV, int. lat. (**1976.740**, 671 μm long); fig. 7, ♂ RV, sieve pore (**1976.735**, 646 μm long).
Scale A (125 μm; ×82), figs. 1–6; scale B (25 μm; ×940), fig. 7.

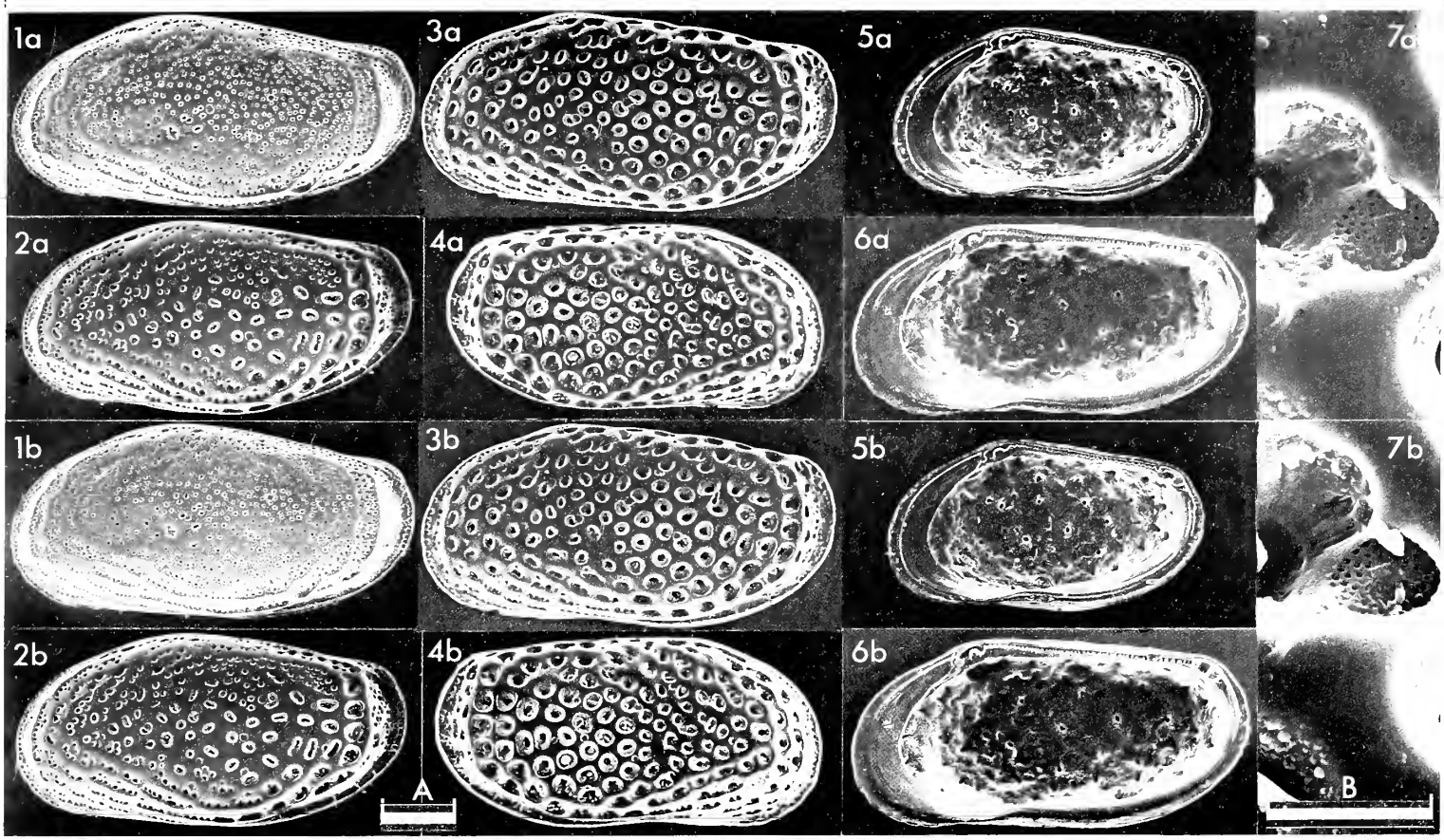




Text-figs. 2, 3. Distribution of fossae and foveolae in *L. rubritincta*. 2. Post. ♂ LV (**1976.736**). See Pl. **3**, 112, fig. 2. 3. Post. ♂ LV (**1976.737**). See Pl. **3**, 112, fig. 1. Circles represent fossae and foveolae, black dots sieve pores.

Explanation of Plate 3, 114

Figs. 1, 3, ♂ RV, terminal hinge elements (**1976.740**); figs. 2, 4, ♂ LV, terminal hinge elements (**1976.736**); fig. 5, ♂ RV, int. musc. sc. (**1976.740**).
Scale A (50 μm; ×530), figs. 1–5.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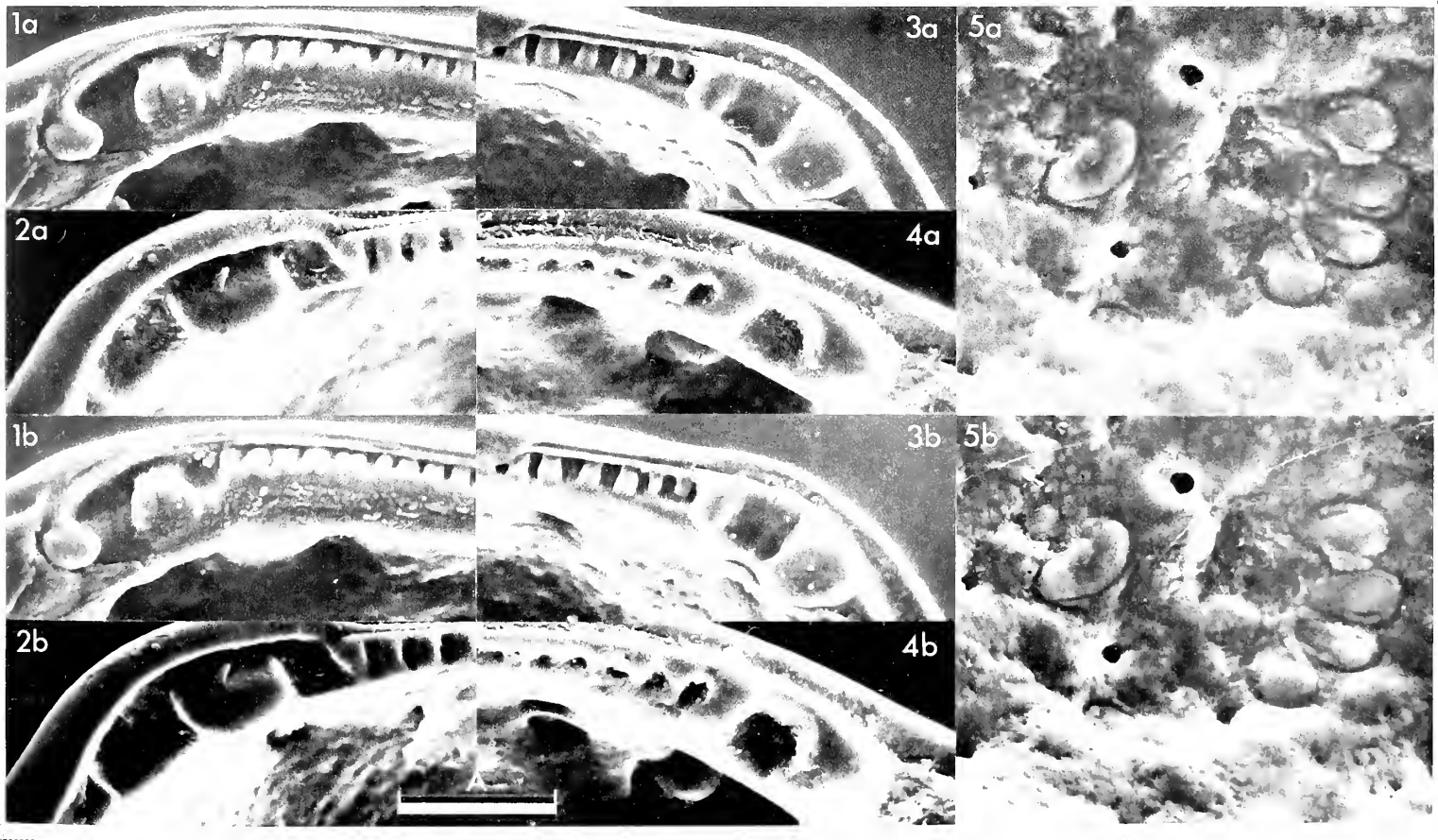
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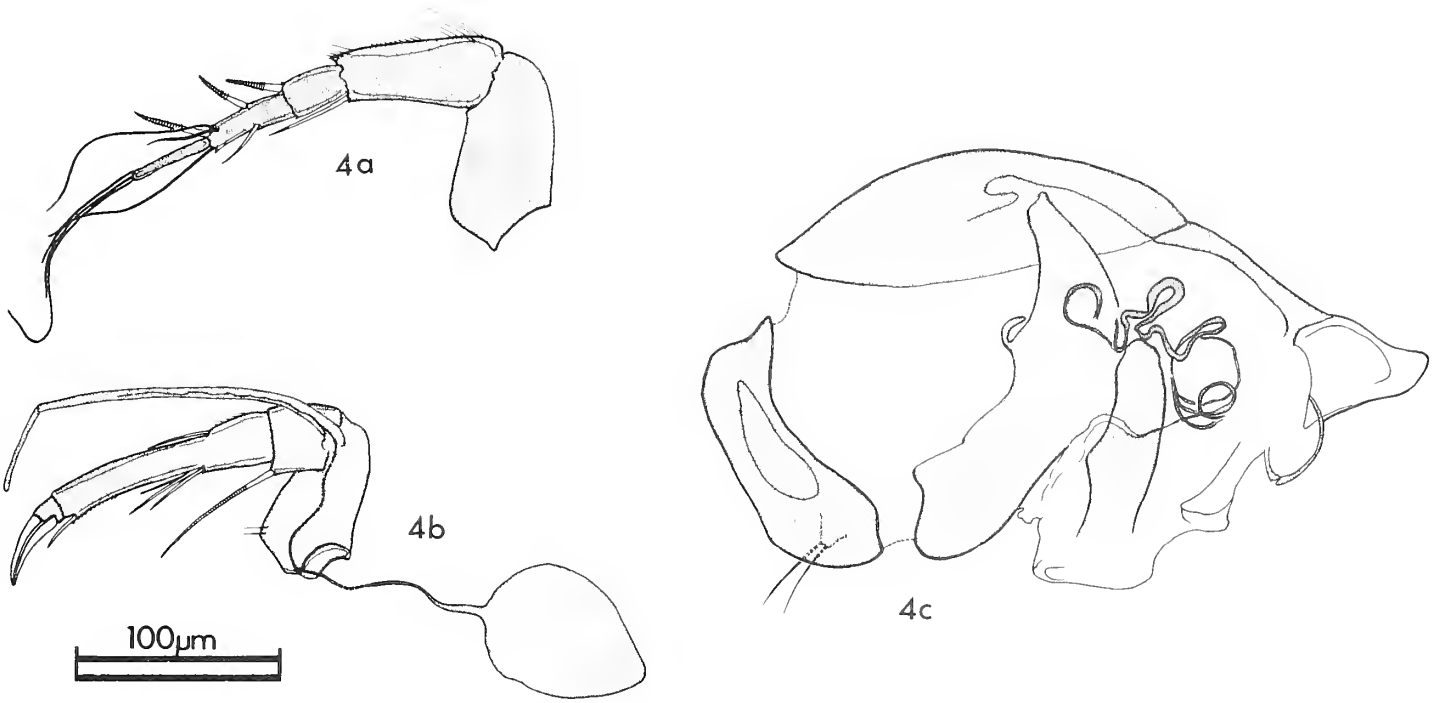
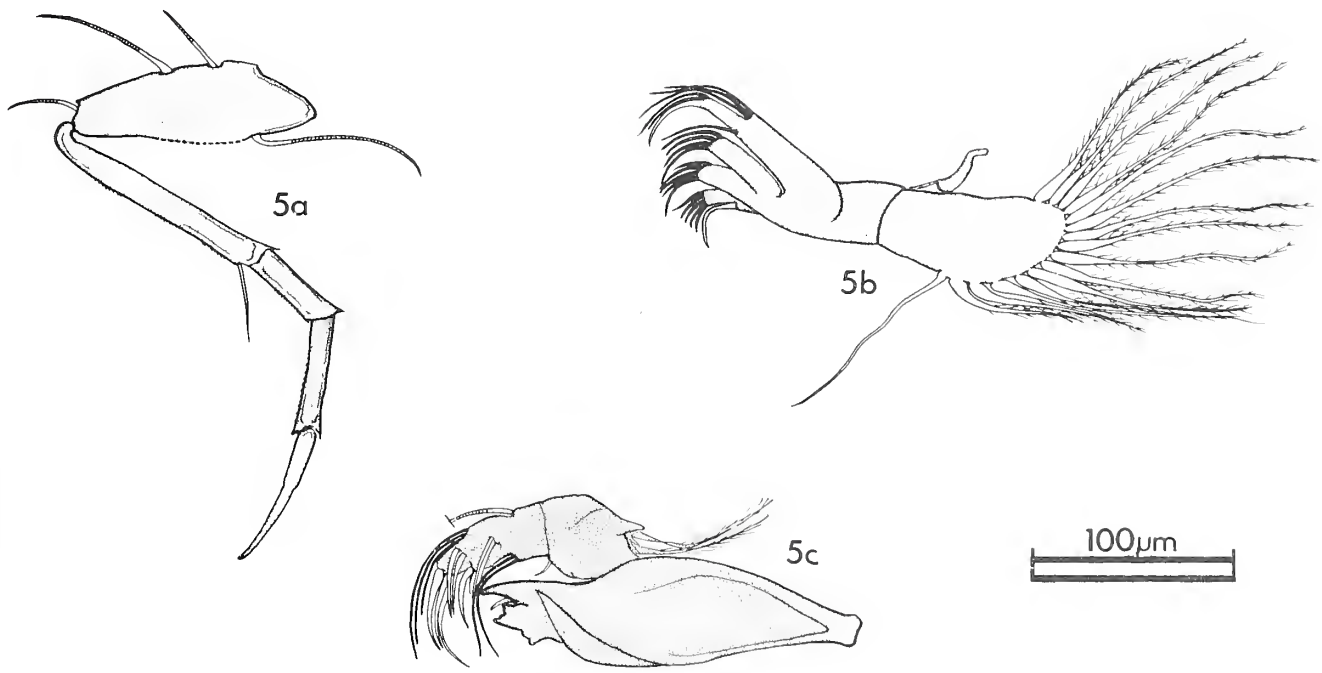


Text-fig. 4. Appendages of ♂ *L. rubritincta*. 4a, first lt. antenna; 4b, second lt. antenna; 4c, rt. copulatory appendage.



Text-fig. 5. Appendages of ♂ *L. rubritincta*. 5a, leg; 5b, maxilla; 5c, mandible.

595.337.14 (119.9) (262.2:161.036.35+ 262.13:161.014.40):551.35 (24.08.33)+552.513

ON *SAGMATOCYTHERE NAPOLIANA* (PURI)

by John Athersuch
(*University of Leicester, England*)

Genus *SAGMATOCYTHERE* gen. nov.

Type-species: *Loxoconcha napoliana* Puri, 1963

Derivation of name: Greek *Sagma, sagmatos*, a saddle + *Cythere*.

Diagnosis: Carapace elongate, quadrangular, sharply truncate posteriorly. Ornament strongly reticulate with post-ocular sinus in male. Prominent pore conuli. Lower of middle two adductor muscle scars is larger; frontal scar U-shaped. Fulcral point very prominent, surrounding deep fulcral notch. Hinge gongylodont, median element finely crenulate. Posterior element strongly lobed and strongly curved.

Remarks: *S. napoliana* (Puri) retains the basic gongylodont hinge characteristic of *Loxoconcha* but differs in having enlarged, lobed and curved posterior hinge elements, different muscle scar pattern (cf. diagnoses), reticulate ornament, pore conuli, quadrangular outline and a post-ocular sinus in the male. *Sagmatocythere* probably includes several other species previously considered in *Loxoconcha*. For example, *L. versicolor* Müller and *L. littoralis* Müller, not examined in the present study but illustrated by Bonaduce, Ciampo & Masoli, 1975 (*Pubbl. Staz. zool. Napoli* **40**, suppl. 1), who considered that these species together with *L. napoliana* formed a distinct group.

Explanation of Plate 3, 118

Fig. 1, ♀ RV, ext. lat. (**1976.753**, 524 μm long); fig. 2, ♀ LV, ext. lat. (**1976.754**, 512 μm long); fig. 3, ♂ LV, ext. lat. (**1976.759**, 512 μm long).
Scale A (250 μm; × 115), figs. 1–3.

Sagmatocythere napoliana (Puri, 1963)

1894 *Loxoconcha mediterranea* sp. nov. G. W. Müller, *Fauna Flora Golf. Neapel* **21**, 347, pl. 29, figs. 3, 10, pl. 26, figs. 33–42 [*non L. avellana* (Brady, 1866) var. *mediterranea* G. Seguenza, 1885, *Il Naturaliste Siciliano* **4**, 57, pl. 2, figs. 11a–d].
1963 *Loxoconcha napoliana nom. nov.* H. S. Puri, *Experientia* **29**, 373.
1964 *Loxoconcha napoliana* Puri; G. Ruggieri, *Pubbl. Staz. zool. Napoli* **33**, 519, figs. 4, 4a.
1971 *Loxoconcha mediterranea* G. W. Müller; P. J. Barbeito-Gonzalez, *Mitt. Hamburg zool. Mus.* **67**, 309, pl. 34, figs. 1a–c, 2a–c.

Lectotype: (here designated). Müller coll. ex-no. **9275**; ♀, decalcified car. and soft parts. No catalogue number, but placed on separate, labelled slides; Institut für Spezielle Zoologie und Zoologisches Museum der Humboldt-Universität zu Berlin.

Type locality: Bay of Naples; Recent.

Figured specimens: Brit. Mus. (Nat. Hist.) nos. **1976.753** (♀ RV: Pl. **3**, 118, fig. 1), **1976.759** (♀ LV: Pl. **3**, 118, fig. 2), **1976.754** (♂ car.: LV, Pl. **3**, 118, fig. 3; RV, Pl. **3**, 122, fig. 2), **1976.757** (♀ car.: Pl. **3**, 120, fig. 3), **1976.755** (♀ car.: Pl. **3**, 120, fig. 1), **1976.756** (♀ car.: Pl. **3**, 120, fig. 2), **1976.758** (♀ car.: RV, Pl. **3**, 122, fig. 1, Pl. **3**, 124, figs. 2, 4; LV, Pl. **3**, 124, figs. 1, 3, 5), **1976.760** (♀ car.: RV, Pl. **3**, 122, fig. 3). Nos. **1976.753–760** coll. from sand at 33m, off Klidhes Island, Cyprus (approx. lat. 35 42′N, long. 34°36′E), by Sqn. Ldr. Chrisp, 1968; none contained soft parts. Text-figs. 1, 2 based on lectotype.

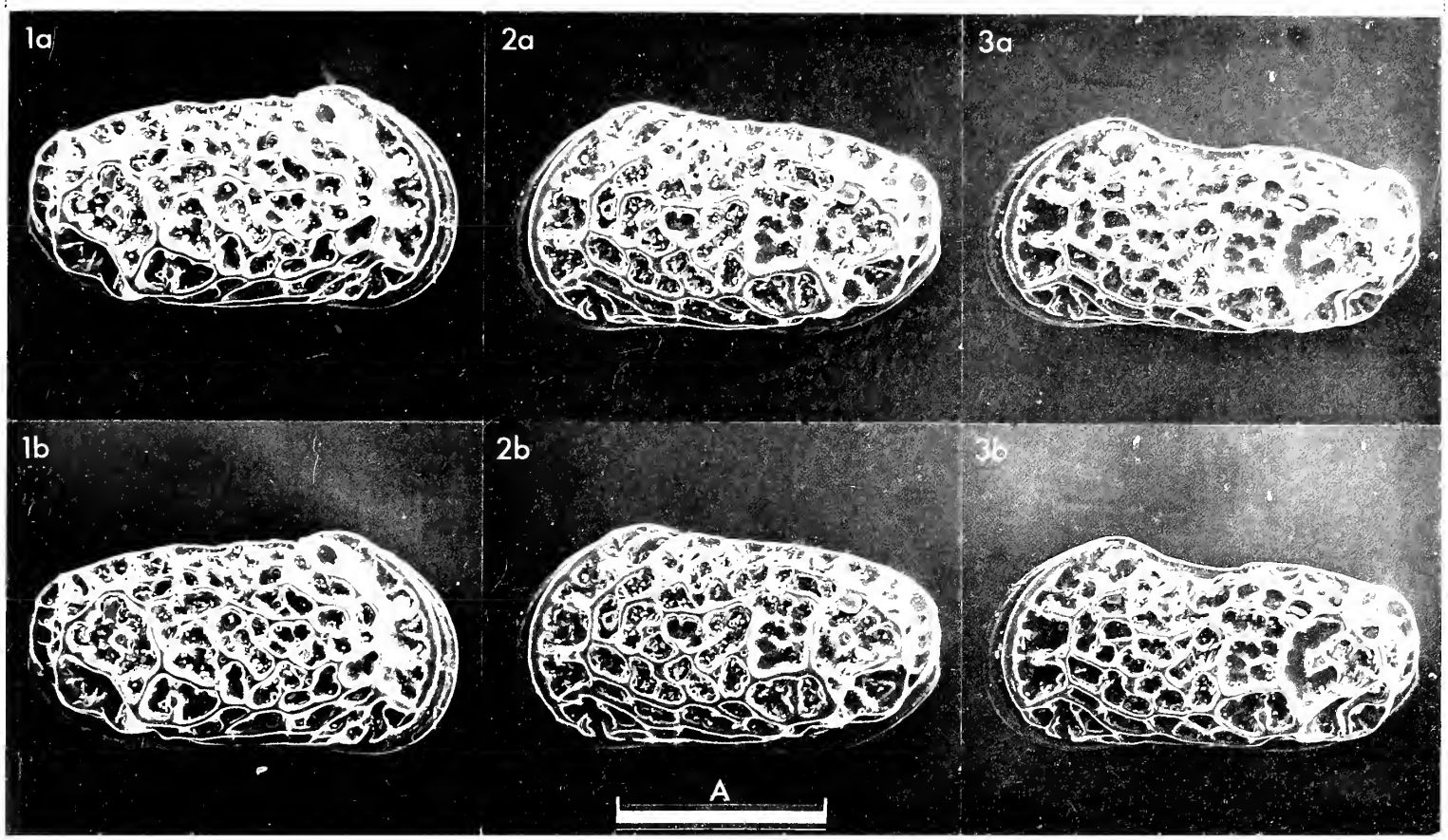
Diagnosis: Irregularly reticulate. Fossae with large soli; separated by undercut muri and apophyses. Simple, often conjunctive pore conuli.

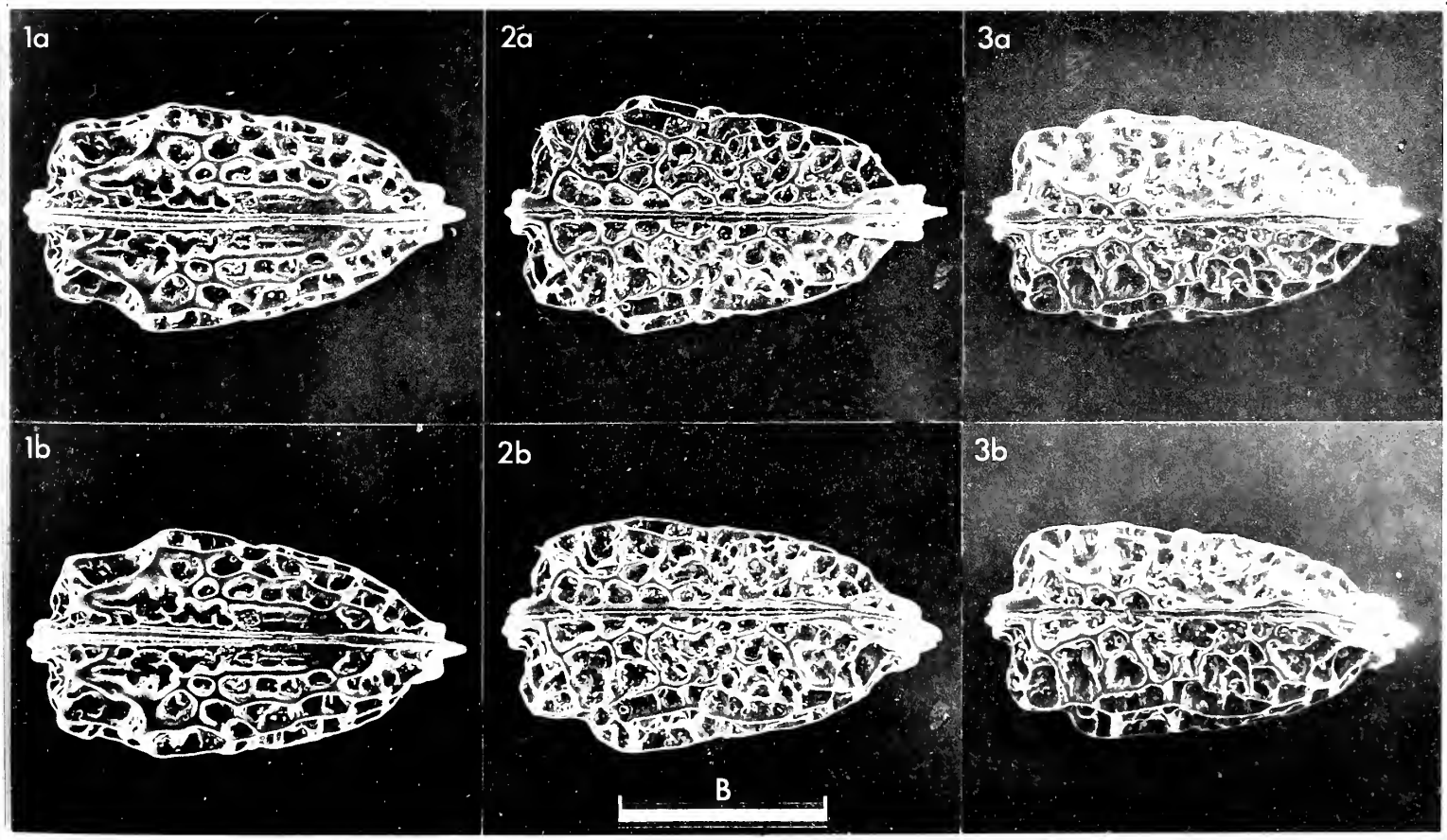
Remarks: *L. napoliana*, proposed as a replacement name for *L. mediterranea* Müller, 1894, *non* Seguenza, 1885, must have the same type specimens as Müller's species. Müller's surviving syntypes have been examined; all are poorly preserved. Specimens described herein from Cyprus were not living at the time of collection, but were, like Müller's, associated with coarse sand and the sea-grass *Posidonia*. Females higher than males, males with a deep dorsal concavity immediately behind the eye. Male copulatory appendages distinctive.

Distribution: Recent: Bay of Naples (Müller, op. cit.), Tuscany (Ruggieri, op. cit.), Cyprus (herein). Miocene, Pliocene, Quaternary of Italy (Ruggieri, op. cit.).

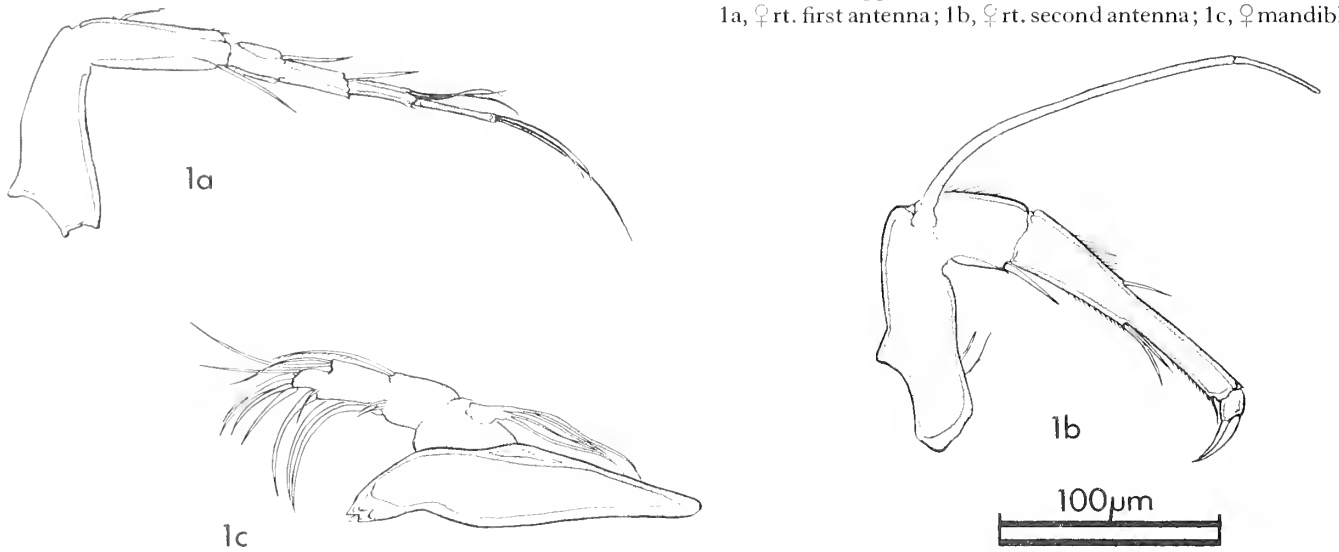
Explanation of Plate 3, 120

Fig. 1, ♂ car., ext. vent. (**1976.755**, 524 μm long); fig. 2, ♀ car., ext. dors. (**1976.756**, 500 μm long); fig. 3, ♂ car., ext. dors. (**1976.757**, 512 μm long).
Scale A (250 μm; × 115), figs. 1–3.


1a
2a
3a
1b
2b
3b
A


1a
2a
3a
1b
2b
3b
B

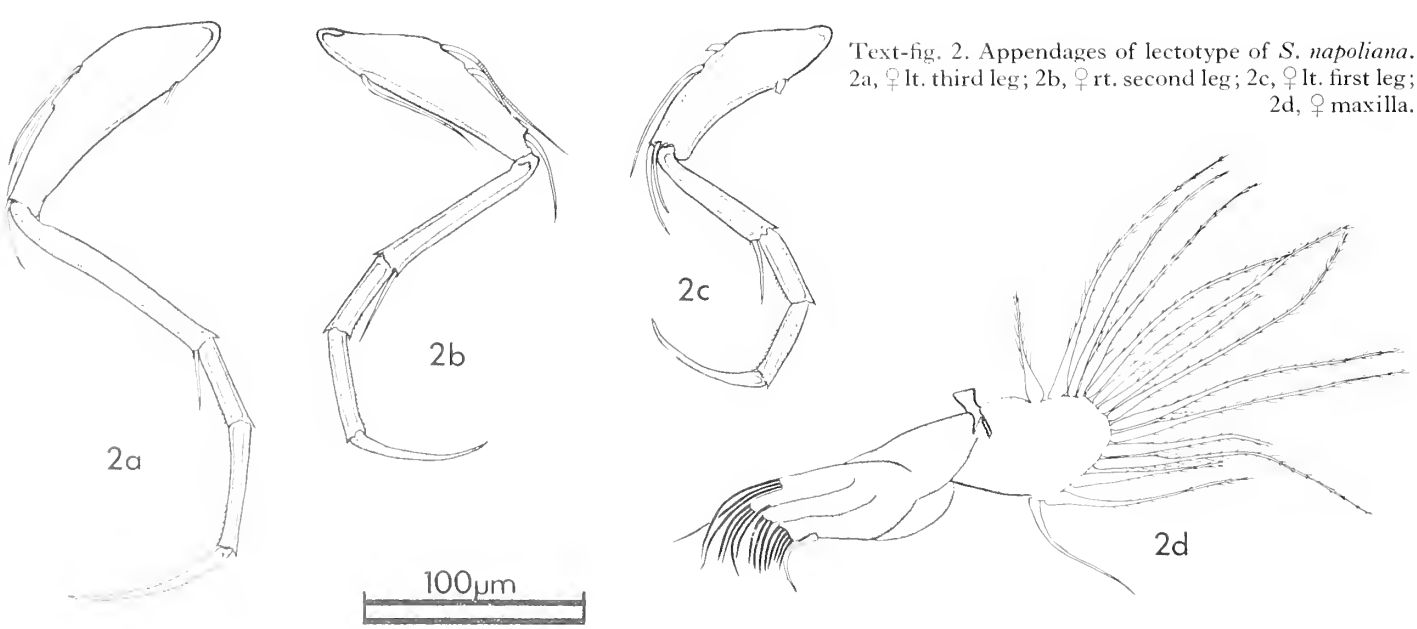
Text-fig. 1. Appendages of lectotype of *S. napoliana*.
1a, ♀rt. first antenna; 1b, ♀rt. second antenna; 1c, ♀mandible.



Explanation of Plate 3, 122

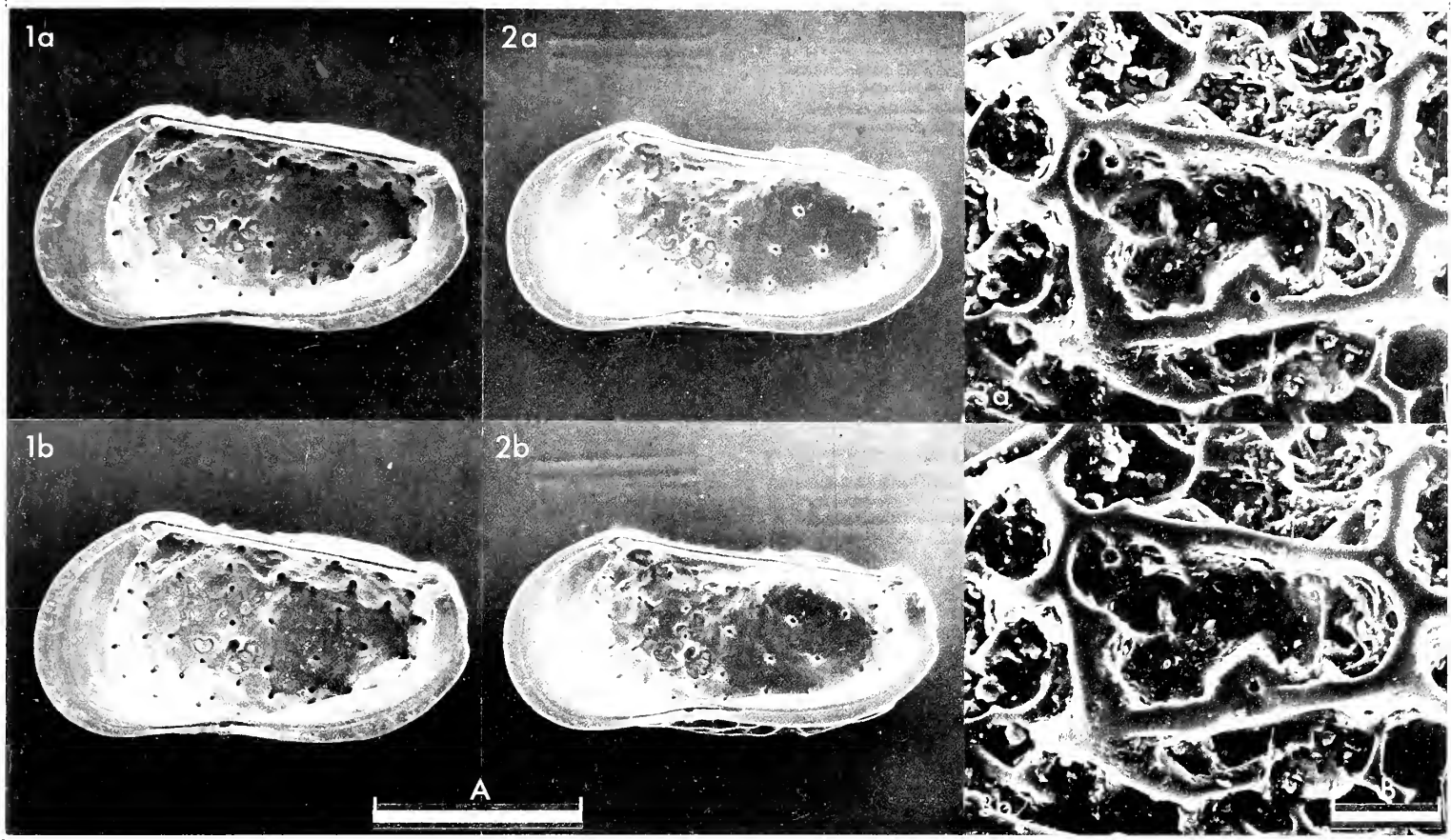
Fig. 1, ♀ RV, int. lat. (**1976.758**, 512 µm long); fig. 2, ♂ RV, int. lat. (**1976.754**); fig. 3, ♀ RV, detail of post. ornament (**1976.760**, 512 µm long).
Scale A (250 µm; × 115), figs. 1, 2; scale B (50 µm; × 290), fig. 3.

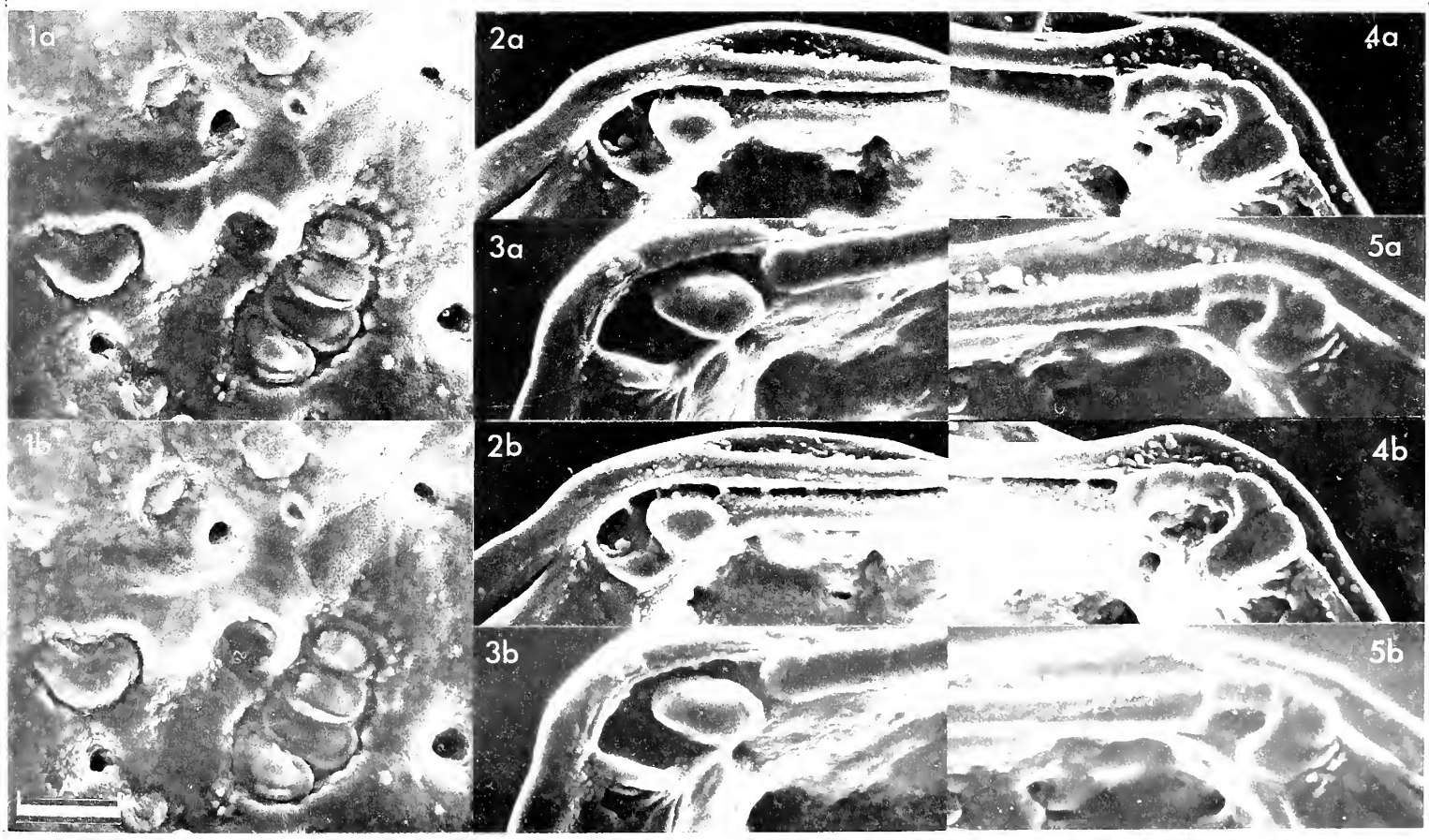
Text-fig. 2. Appendages of lectotype of *S. napoliana*.
2a, ♀lt. third leg; 2b, ♀rt. second leg; 2c, ♀lt. first leg; 2d, ♀maxilla.



Explanation of Plate 3, 124

Fig. 1, ♂ RV, int. musc. sc. (**1976.758**); figs. 2, 4, ♂ RV, terminal hinge elements (**1976.758**); figs. 3, 5, ♀ LV, terminal hinge elements (**1976.758**).
Scale A (25 µm; × 635), figs. 1–5.


1a
2a
1b
2b
A
a
3a
b


1a
2a
4a
3a
5a
1b
2b
4b
3b
5b

595.337.12 (119.9) (548.7:161.079.07 + 548.7:161.079.06):551.312

ON *CYPRIS SUBGLOBOSA* J. DE C. SOWERBY

by John W. Neale
(*University of Hull, England*)

Cypris subglobosa J. de C. Sowerby, 1840

1840 *Cypris subglobosa* sp. nov. J. de C. Sowerby *in* J. G. Malcolmson, *Trans. Geol. Soc. Lond.* ser. 2, **5**, 47, fig. 3.
1886 *Chlamydotheca subglobosa* (Sowerby, *fide* Baird); G. S. Brady, *J. Linn. Soc.* **19**, 300, 301, pl. 38, figs. 24–27a.
1898 *Cypris granulata* sp. nov. E. Daday, *Termés. Füz.* **21**, 73–75, figs. 36a–f.
1906 *Eurycypris subglobosa* Sow.; W. Vavra, *Zool. Jb.* **23**, 420–422, pl. 24, figs. 9–13.
1912 *Cypris subglobosa* Sowerby; G. W. Müller, *Ostracoda, Das Tierreich* **31**, 180.
1972 *Cypris subglobosa* Sowerby 1840; I. Okubo, *Res. Bull. Shujitsu J. Coll., Okayama* **1**, 61–72, 4 pls., 2 figs. (q.v. for full synonymy).

Type specimens: The repository is unknown.

Type locality: Sichel Hills, India; fossil.

Figured specimens: University of Hull coll. nos. **HU.241.R.5** (juv. RV: Pl. **3**, 130, fig. 1), **HU.241.R.8** (♀ car.: Pl. **3**, 128, fig. 2), **HU.241.R.9** (♀ LV: Pl. **3**, 126, fig. 2; Pl. **3**, 128, fig. 3; Pl. **3**, 132, fig. 1), **HU.241.R.12** (♀ RV: Pl. **3**, 126, fig. 1), **HU.241.R.15** (♀ RV: Pl. **3**, 128, fig. 1; Pl. **3**, 130, fig. 2; Pl. **3**, 132, fig. 2), **HU.241.R.3b** (limbs: Text-figs. 1, 2). **HU.241.R.5, 8, 9, 12, 15** all from Pond, Moratuwa, Sri Lanka; lat. 6 46′N, long. 79°53′E. **HU.241.R.3b** from estate pond in coconut plantation, Battuluoya, Sri Lanka; lat. 7°43′N, long. 79°50′E.

Explanation of Plate 3, 126

Fig. 1, ♀ RV, ext. lat. (**HU.241.R.12**, 1375 μm long); fig. 2, ♀ LV, ext. lat. (**HU.241.R.9**, 1420 μm long).
Scale A (250 μm; × 73), fig. 1; scale B (250 μm; × 70), fig. 2.

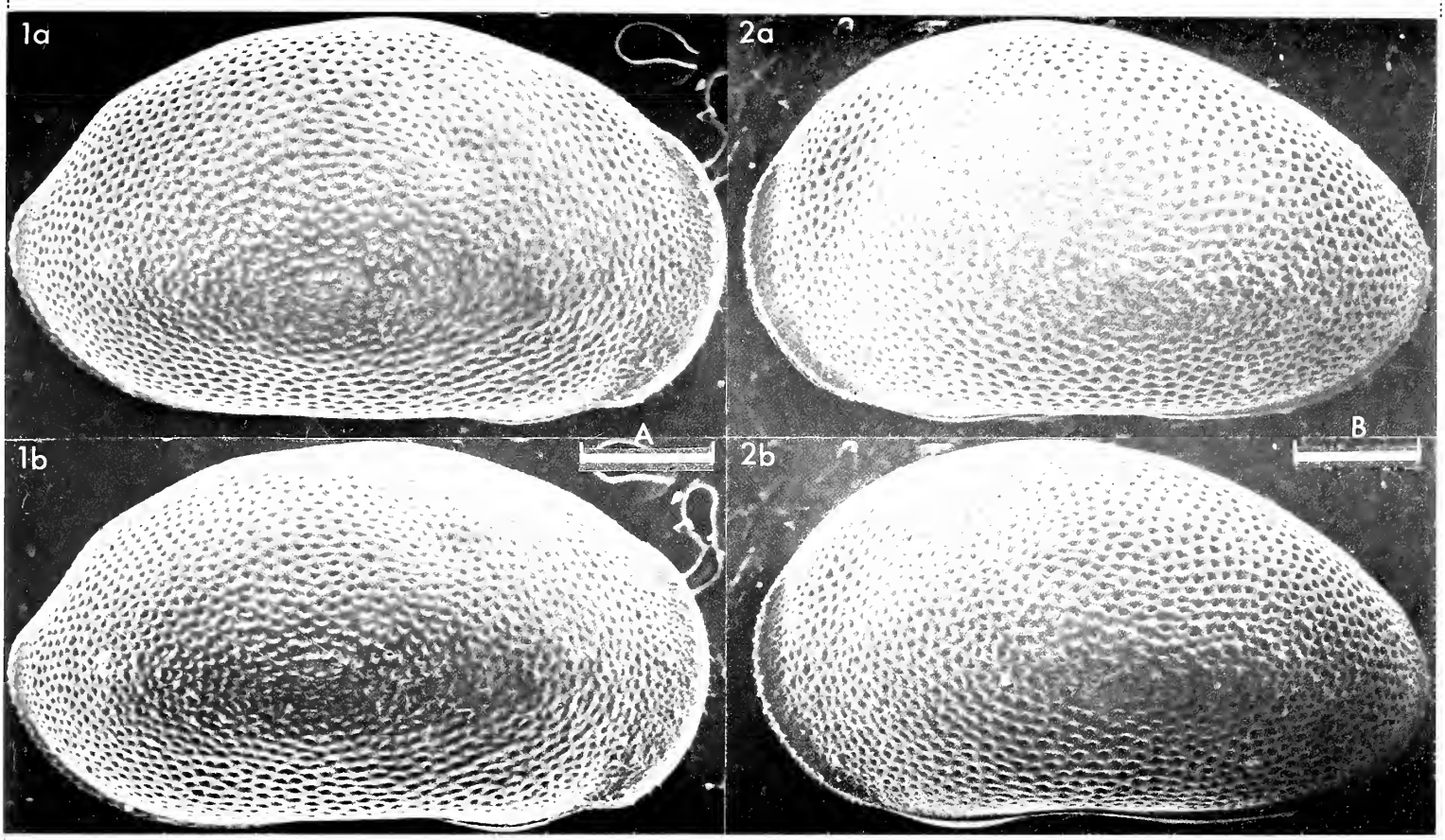
Diagnosis: Valves large, pitted, with posteroventral serrations and with straight or concave posterodorsal margin in right valve. Fresh material is yellowish-green in colour.

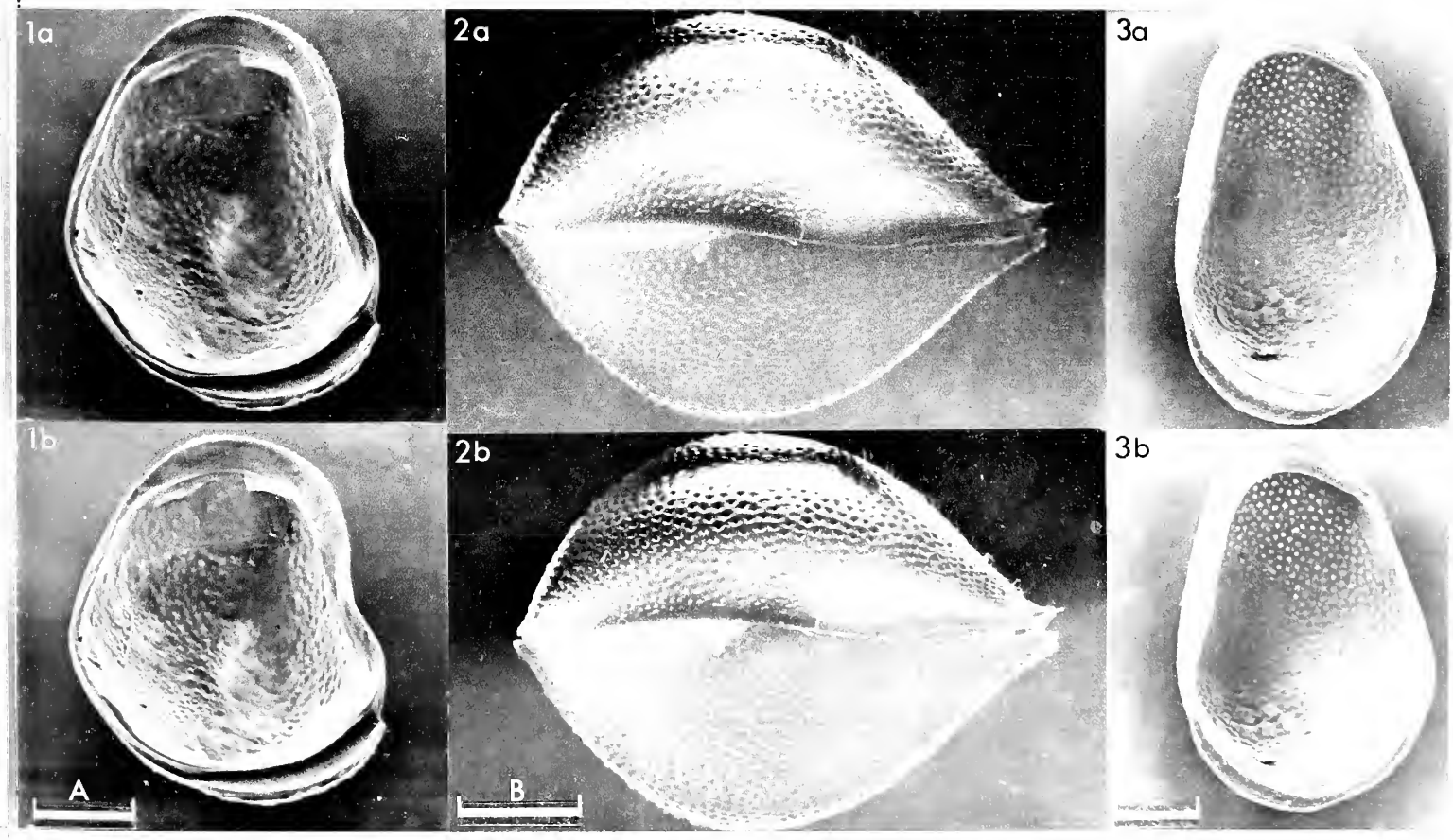
Remarks: This easily recognised *Cypris* has strong pitted ornamentation, the living animal is yellow-green in colour and has an adult length of about 1·4 mm in Sri Lanka where it is generally common and occurs in more than twenty of the localities examined. Based originally (J. de C. Sowerby, 1840) on fossil material from India, this species was regarded as living in India (Baird, 1859) and Sri Lanka (Brady, 1886) and has since been widely reported from Japan and Indonesia in the E to Venezuela and the U.S.A. in the W where minor variations occur. It has also been recorded in Yugoslavia and the U.S.S.R.

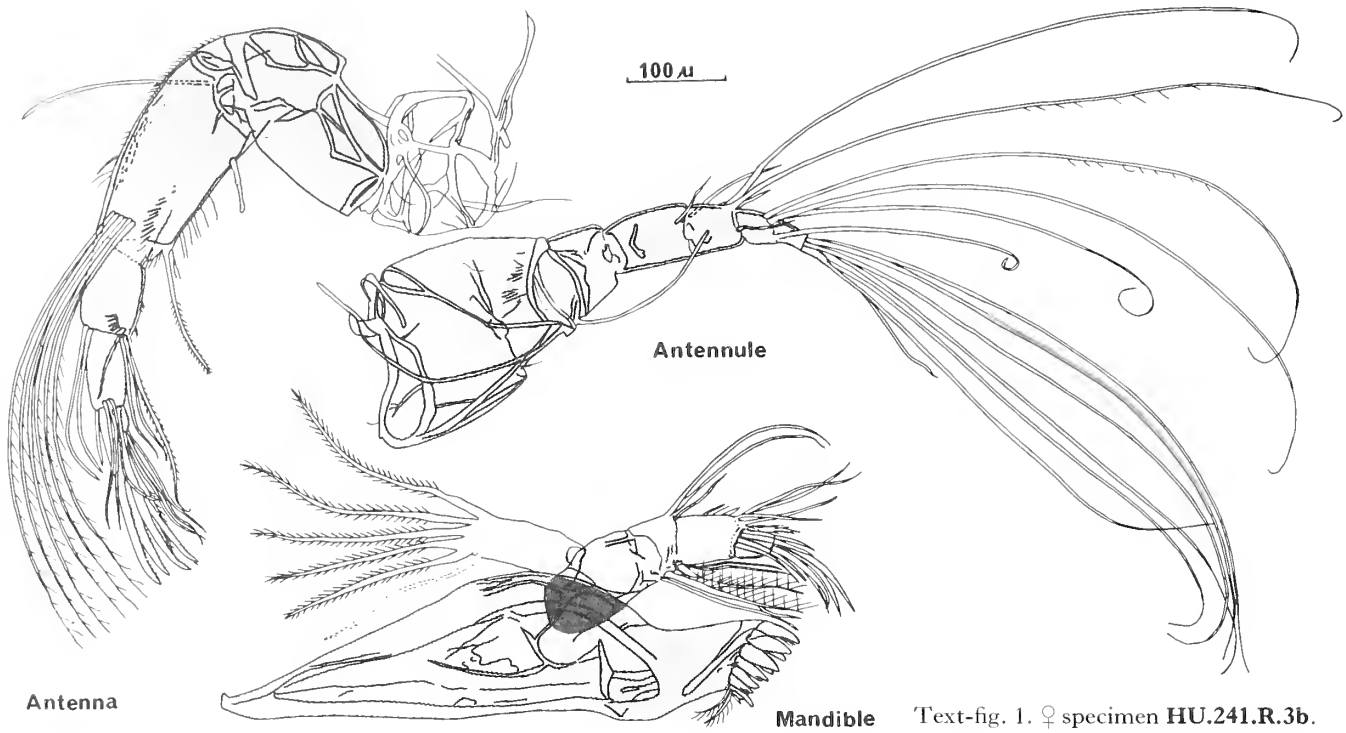
The large flange and flange groove in the right valve only develops in the adult (see Pl. **3**, 130, figs. 1, 2) and males have never been found.

Explanation of Plate 3, 128

Fig. 1, ♂ RV, int. ant. obl. (**HU.241.R.15**, 1425 μm long); fig. 2, ♀ car., ext. dors. (**HU.241.R.8**, 1400 μm long); fig. 3, ♀ LV, int. ant. obl. (**HU.241.R.9**, 1420 μm long).
Scale A (250 μm; × 57), fig. 1; scale B (250 μm; × 70), fig. 2; scale C (250 μm; × 45), fig. 3.


1a
2a
A
B
1b
2b

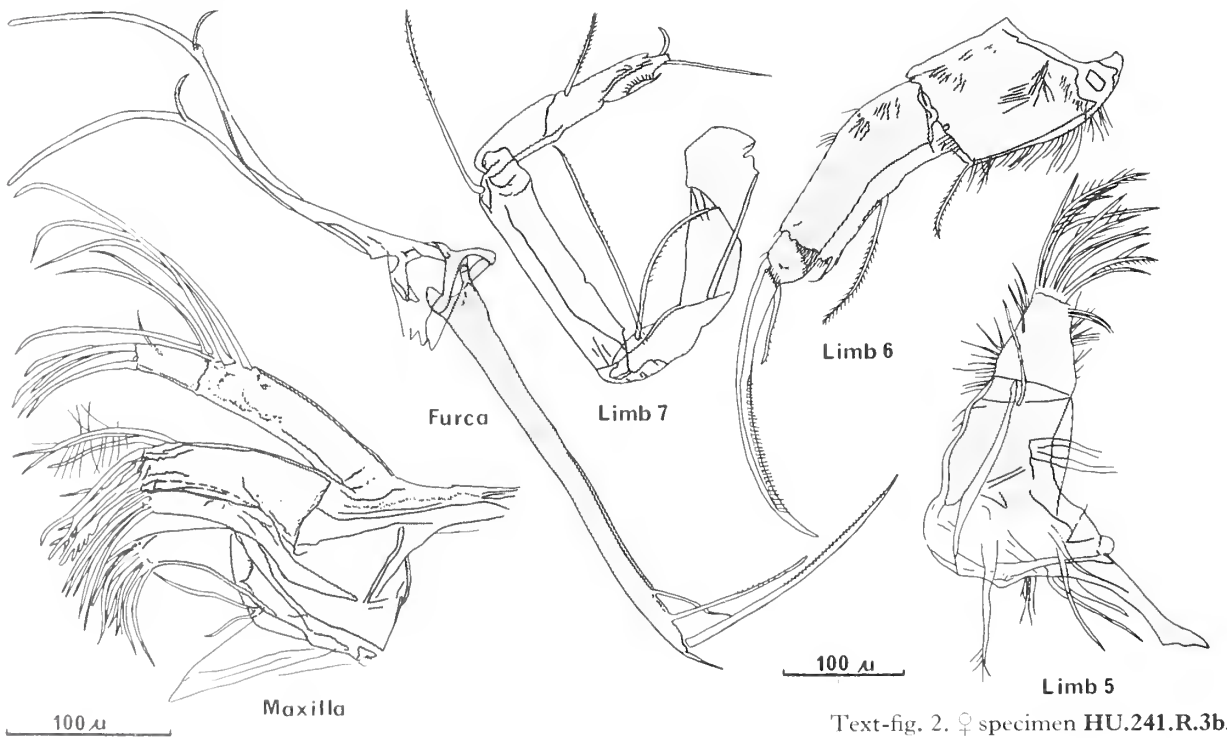

1a
2a
3a
1b
2b
3b
A
B



Text-fig. 1. ♀ specimen **HU.241.R.3b**.

Explanation of Plate 3, 130

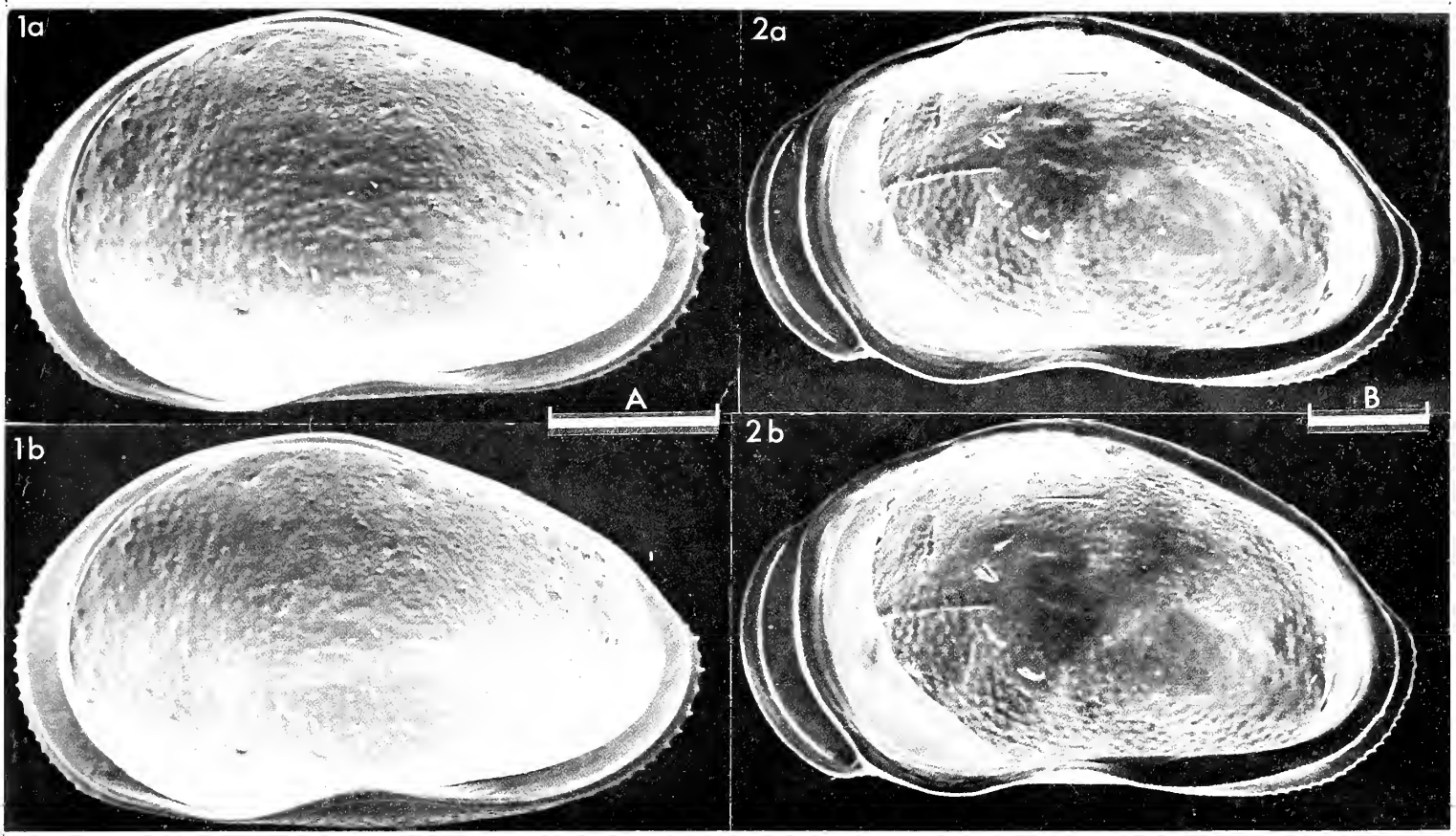
Fig. 1, juv. RV, int. lat. (**HU.241.R.5**, 1026 µm long); fig. 2, ♀ RV, int. lat. (**HU.241.R.15**, 1425 µm long).
Scale A (250 µm; × 93), fig. 1; scale B (250 µm; × 66), fig. 2.

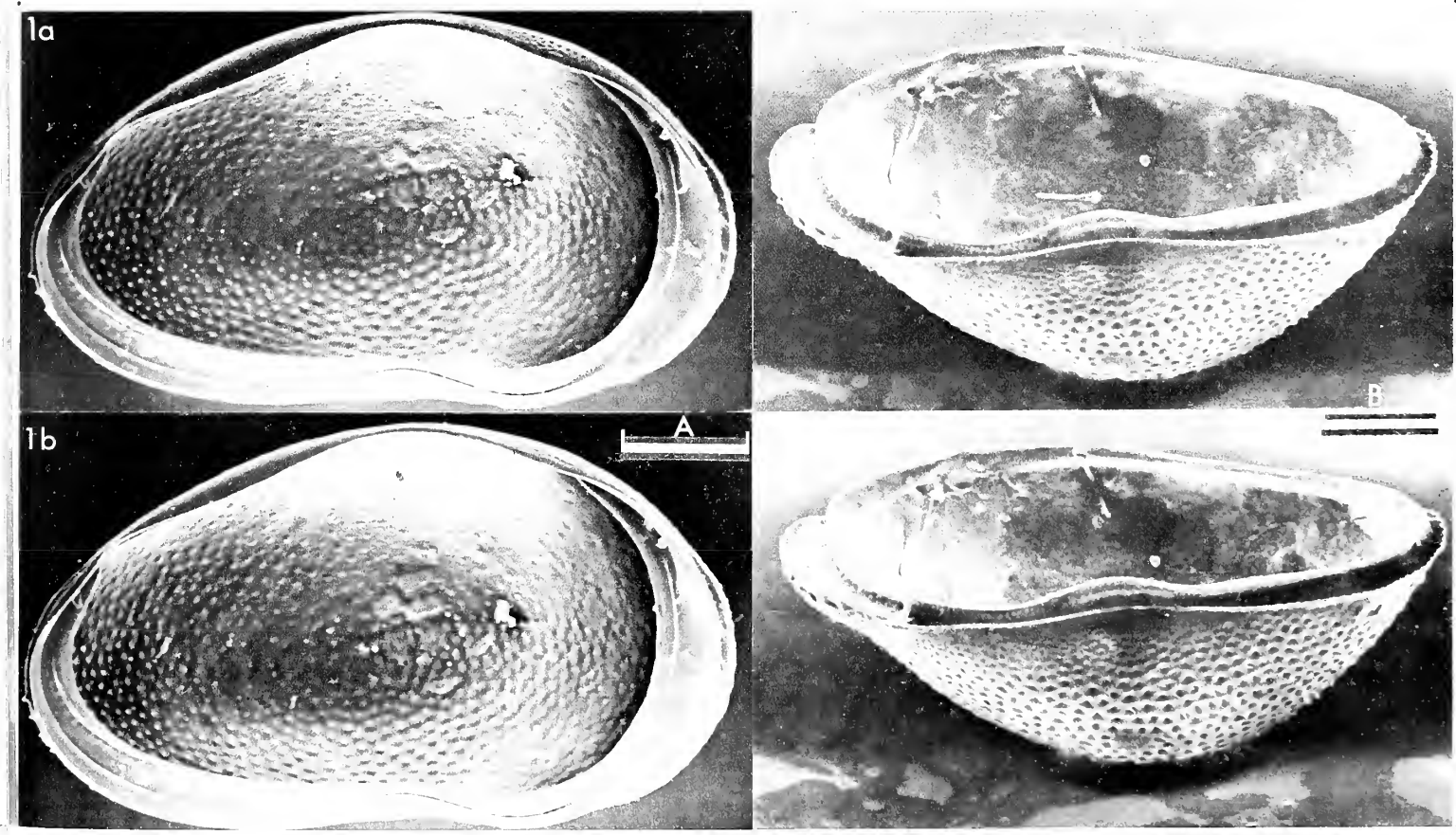


Text-fig. 2. ♀ specimen **HU.241.R.3b**.

Explanation of Plate 3, 132

Fig. 1, ♀ LV, int. lat. (**HU.241.R.9**, 1420 µm long); fig. 2, ♀ RV, int. vent. obl. (**HU.241.R.15**, 1425 µm long).
Scale A (250 µm; × 69), fig. 1; scale B (250 µm; × 65), fig. 2.


1a
2a
A
B
1b
2b


1a
B
1b
A

ON *CYPRIS DECARYI* GAUTHIER

by John W. Neale
(*University of Hull, England*)

Cypris decaryi Gauthier, 1933

1933 *Cypris decaryi* nov. sp. H. Gauthier, *Bull. Soc. Zool. France* **58**, 209–216, 4 figs.
1934 *Cypris ravenala* n. sp. V. Brehm, *Zool. Anz.* **108**, 74, figs. 1–7.
1944 *Cypris decaryi* Gauthier; W. Klie, *Inst. Parc. Nation. Congo Belge, fasc.* **12**, 16, 17.
1961 *Cypris decaryi* Gauthier; E. Triebel, *Senck. biol.* **42**, 56–59, pl. 6, figs. 1–8, pl. 7, figs. 9–12, pl. 8, figs. 13–18, pl. 9, figs. 19–20.
1964 *Cypris decaryi* Gauthier, 1933; G. Hartmann, *Asiatische Ostracoden, Int. Rev. Ges. Hydrobiol.* 144–145.
1971 *Cypris decaryi* Gauthier, 1933; K. G. McKenzie, *Phil. Trans. Roy. Soc. Lond.* B **260**, 265.

Type specimens: The repository is unknown.

Type locality: Androy, S Madagascar.

Figured specimens: University of Hull coll. nos. **HU.243.R.1a** (♀ LV, RV: Pl. **3**, 134, figs. 1, 2), **HU.243.R.2a** (♀ LV, RV: Pl. **3**, 138, figs. 1, 2; Pl. **3**, 140, fig. 2), **HU.243.R.3a** (♀ LV, RV: Pl. **3**, 136, figs. 1, 2; Pl. **3**, 140, figs. 1, 3). [Limbs (Text-figs. 1, 2): Note that suffix 'b' in catalogue number indicates separate slide of limbs and soft parts of same specimen as 'a' which is slide containing the valves.] **HU.243.R.1**, **2** from Pond, Kallundai, Jaffna, Sri Lanka; **HU.243.R.3** from Pond, Thunnalai, Jaffna, Sri Lanka. Both localities approx. lat. 9°37′N, long. 80°03′E.

Explanation of Plate 3, 134

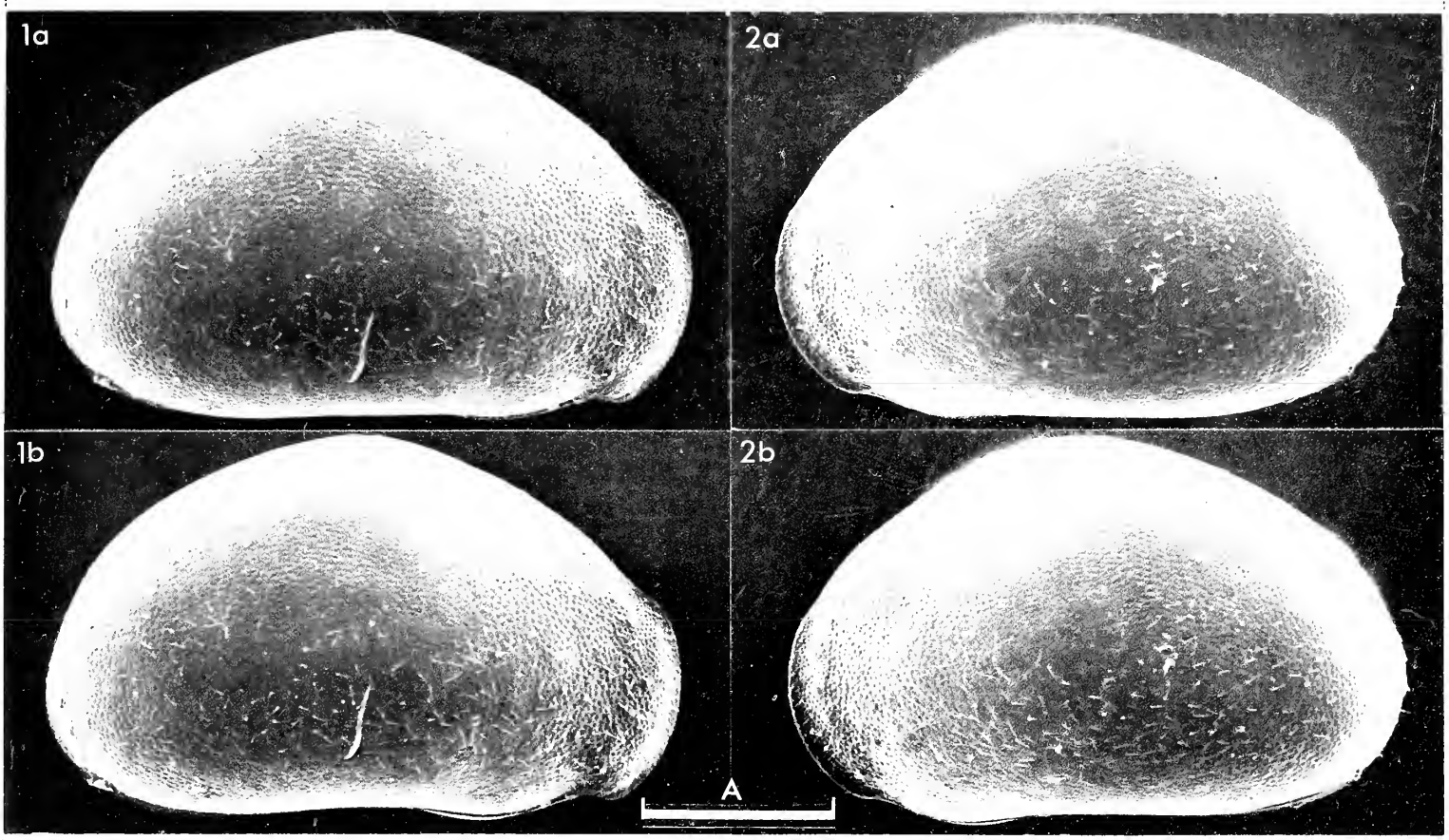
Fig. 1, ♀ RV, ext. lat. (**HU.243.R.1a**, 1680 μm long); fig. 2, ♀ LV, ext. lat. (**HU.243.R.1a**, 1670 μm long).
Scale A (500 μm; × 53), figs. 1, 2.

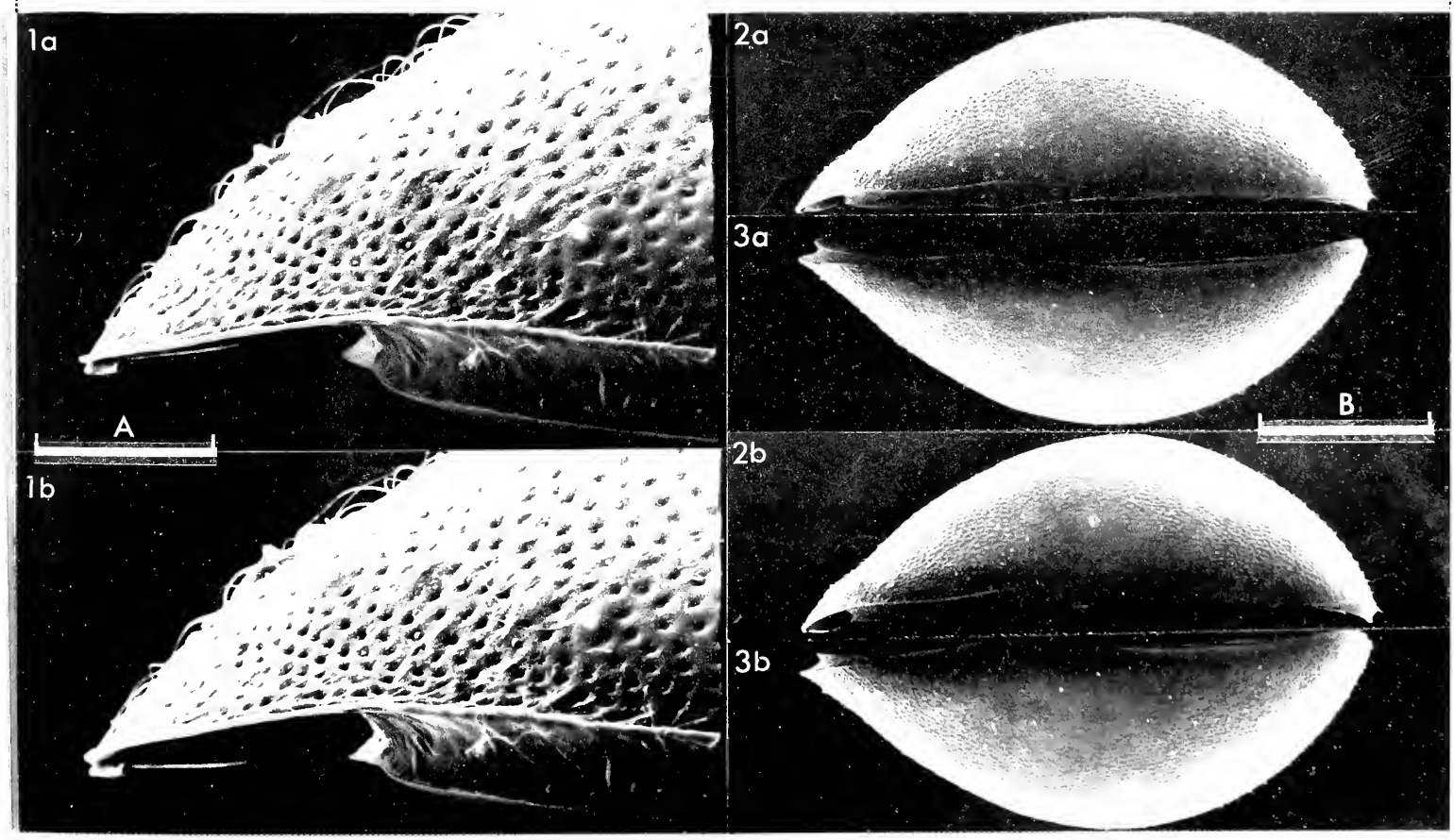
Diagnosis: Surface finely punctate, rounded posteriorly in lateral view, without posteroventral serrations. In dorsal view, pointed anteriorly with greatest width at about mid-length. Fresh material generally lacking colour.

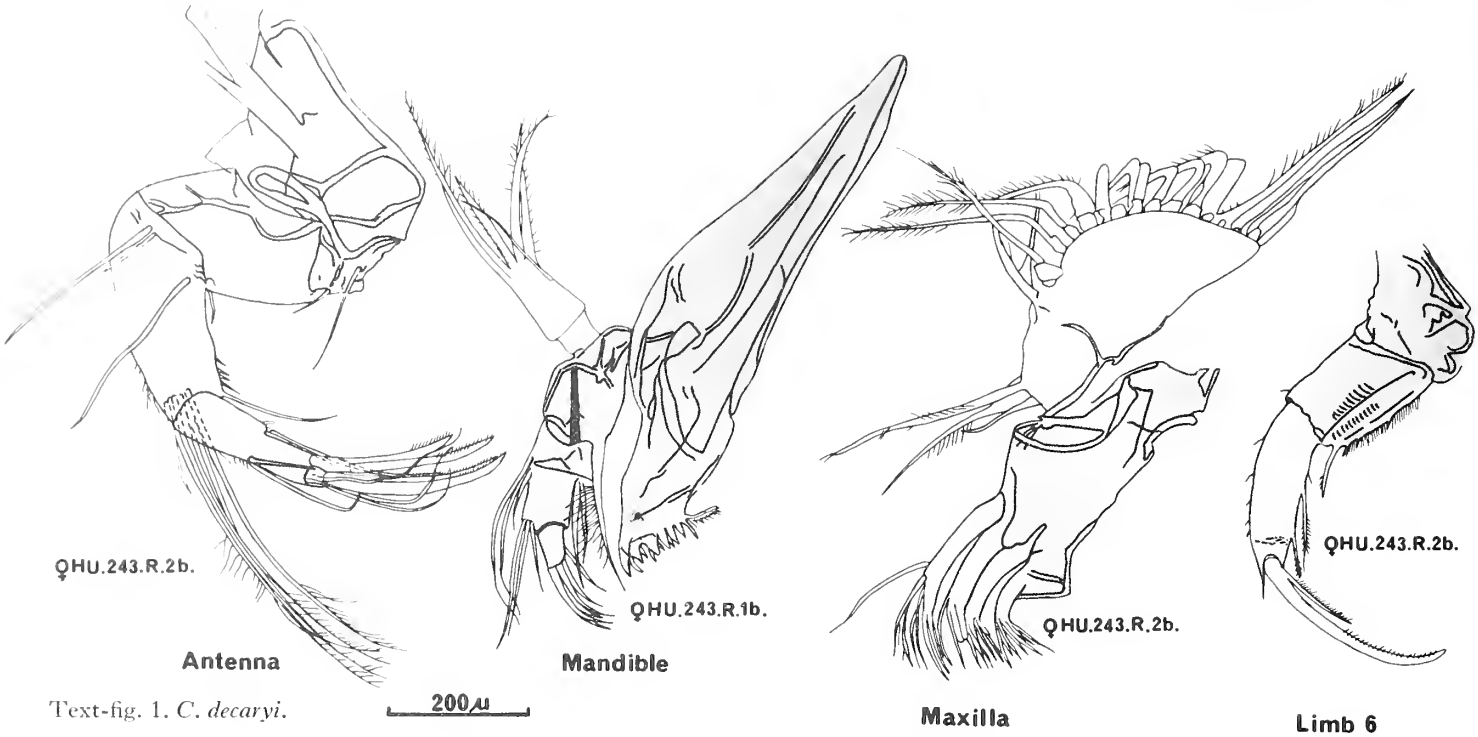
Remarks: This species is widely distributed geographically but appears to be rare. Originally described from Androy at the southern end of Madagascar by Gauthier, Hartmann (1964) confirmed its presence at Itampolo on that island. Klie (1944) found it in the Belgian Congo (Zaire), and in S America Brehm (1934) found it in Dutch Guiana (Surinam) and Triebel (1961) in Curaçao (Dutch W Indies). In Sri Lanka it is only known from two localities in the Jaffna Peninsula at the northern end of the island. There is some variation in the pilosity of the sixth limb within the Sri Lanka material. Some agrees well with Gauthier's original figure but compare this with the figure given here of **HU.243.R.2b**. Males are unknown. Associated species include *Cypris subglobosa* J. de C. Sowerby and *Centrocypris viridis* Neale. *C. decaryi* appears able to tolerate a considerable salinity variation for from Aldabra, Seychelles, McKenzie (1971) records it in ten samples from pools and lakes whose salinity ranged from 1‰–8·9‰.

Explanation of Plate 3, 136

Fig. 1, ♂ RV, ext. ant. dors. (**HU.243.R.3a**); fig. 2, ♀ RV, ext. dors. (**HU.243.R.3a**, 1740 μm long); fig. 3, ♀ LV, ext. dors. (**HU.243.R.3a**, 1730 μm long).
Scale A (100 μm; × 250), fig. 1; scale B (500 μm; × 47), figs. 2, 3.


1a
2a
1b
2b
A

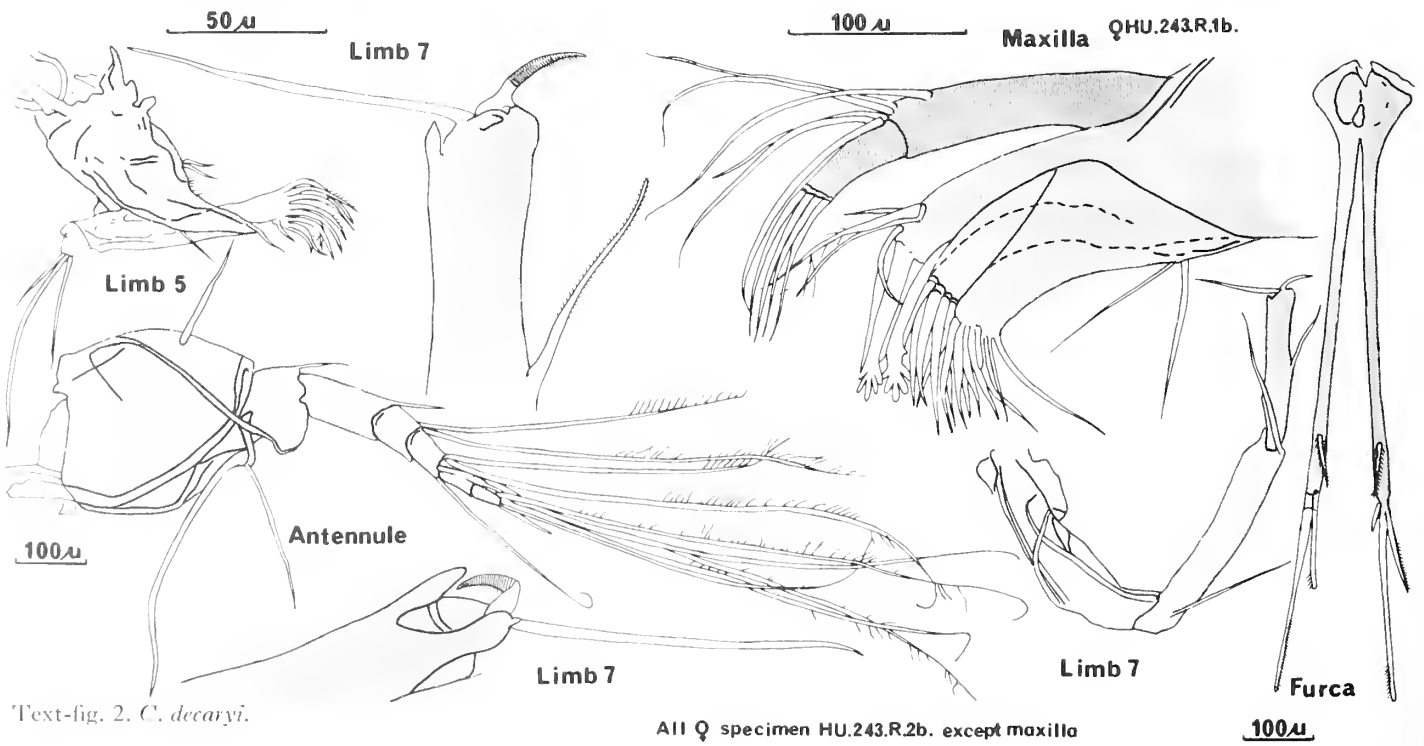

1a
2a
3a
A
B
1b
2b
3b



Text-fig. 1. *C. decaryi*.

Explanation of Plate 3, 138

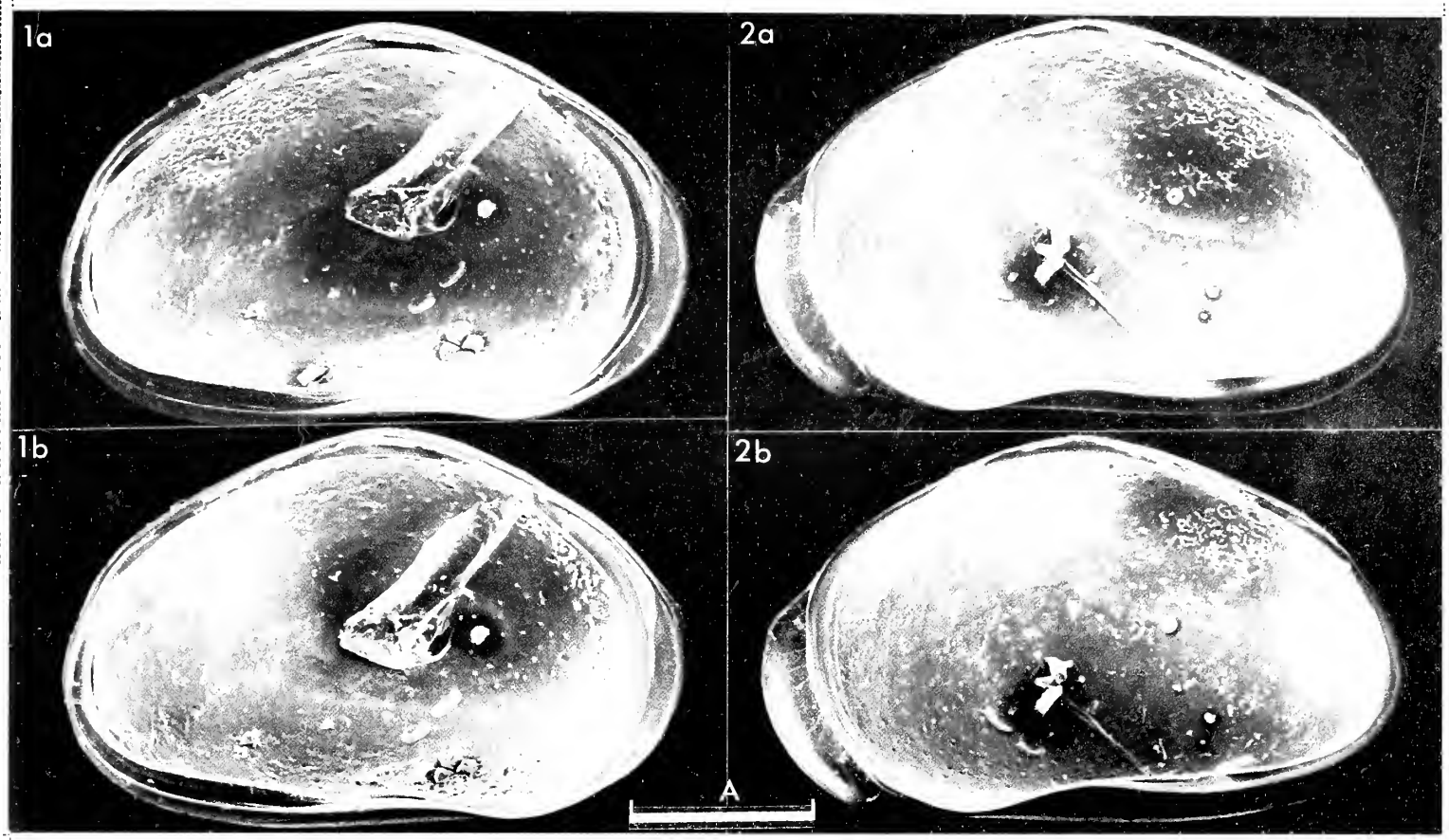
Fig. 1, ♀ LV, int. lat. (**HU.243.R.2a**, 1710 μm long); fig. 2, ♀ RV, int. lat. (**HU.243.R.2a**, 1720 μm long).
Scale A (500 μm; ×52), figs. 1, 2.

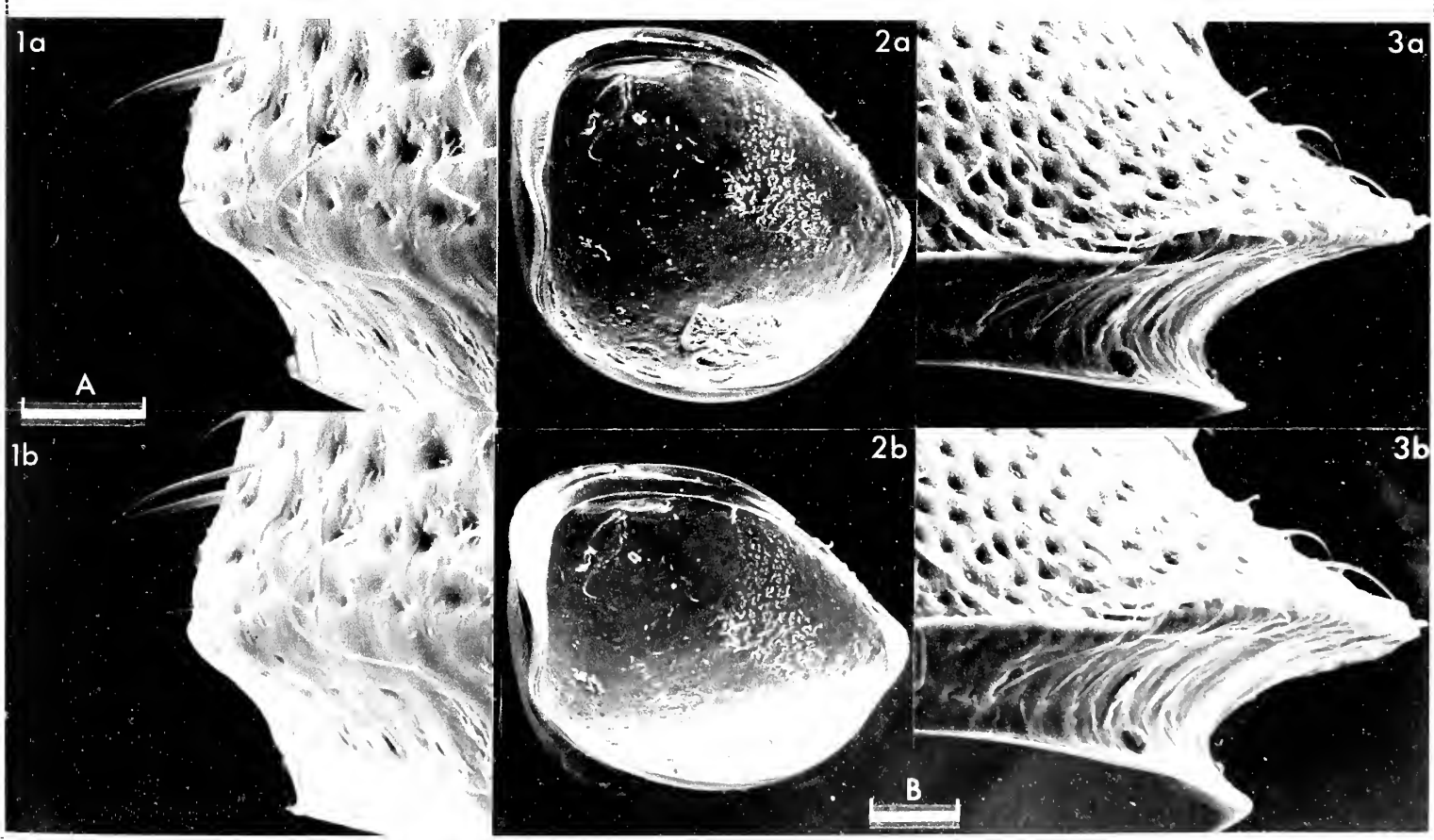


Text-fig. 2. *C. decaryi*.

Explanation of Plate 3, 140

Fig. 1, ♂ LV, ext. post. dors. (**HU.243.R.3a**); fig. 2, ♀ LV, int. ant. obl. (**HU.243.R.2a**); fig. 3, ♀ LV, ext. ant. dors. (**HU.243.R.3a**).
Scale A (20 μm; ×850), figs. 1, 3; scale B (250 μm; ×52), fig. 2.


1a
2a
1b
2b
A


1a
2a
3a
A
1b
2b
3b
B

ON *CYTHERELLA* (*CYTHERELLOIDEA*) *OBOLUS* DORUK sp. nov.

by Neriman Doruk
(*University of Ege, Izmir, Turkey*)

Cytherella (*Cytherelloidea*) *obolus* sp. nov.

Holotype: Brit. Mus. (Nat. Hist.) **IO 5761**, RV.

Type locality: A road section between Babatorun and Com, 1 km SW of Babatorun, Antakya region of Turkey; approx. lat. 36°04′N, long. 36°15′E. Uppermost Miocene; yellow sandstone with molluscan shell fragments and foraminifera. Presumed littoral.

Derivation of name: From the Greek, 'coin', referring to the fancied resemblance of the surface ornament to groups of coins.

Figured specimens: Brit. Mus. (Nat. Hist.) **IO 5761** (RV: Pl. **3**, 142, fig. 1; Pl. **3**, 144, fig. 3), **IO 5762** (LV: Pl. **3**, 142, fig. 2; Pl. **3**, 144, figs. 1, 2). Both specimens are from the base of the section at the type locality.

Explanation of Plate 3, 142

Fig. 1, RV ext. lat. (holotype, **IO 5761**, 740 μm long); fig. 2, LV ext. lat. (**IO 5762**, 715 μm long).
Scale A (250 μm; ×113), fig. 1; scale B (250 μm; ×117), fig. 2.

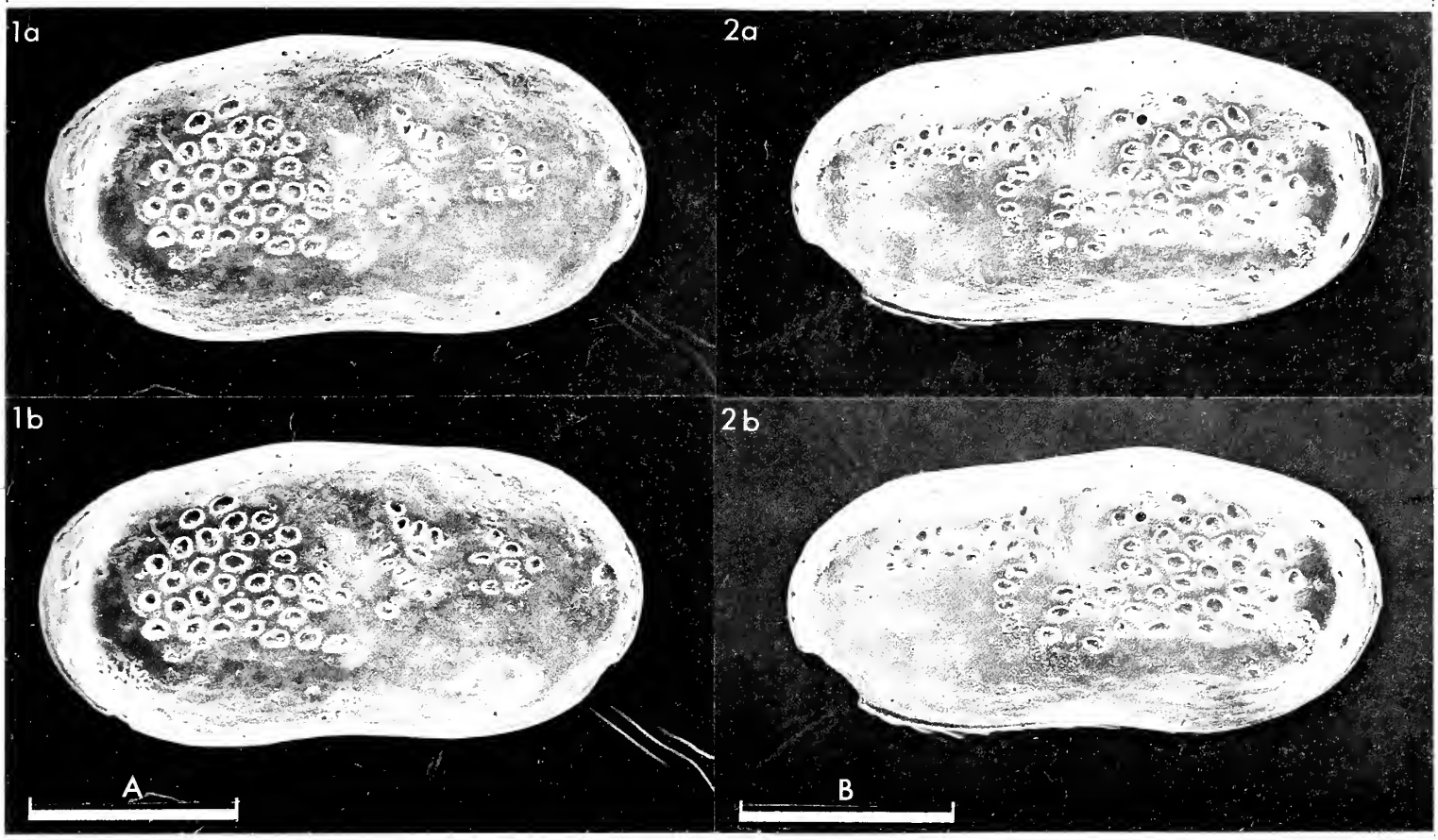
Diagnosis: Elongate with three groups of pits, the largest towards the posterior, the smallest towards anterior. Dorsal margin marked by angular change of direction in posterior third.

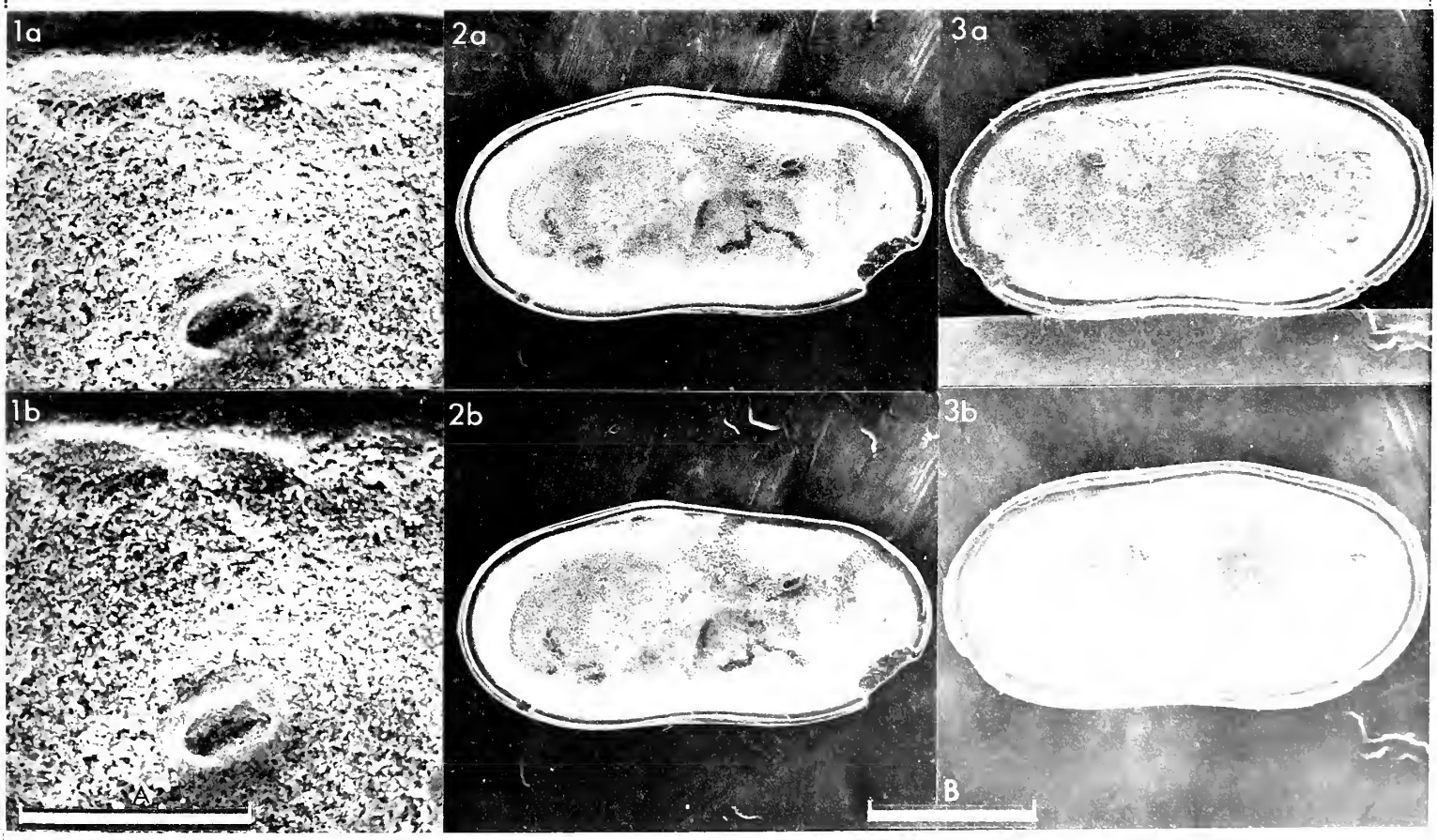
Remarks: This species differs from *C. fischeri* Terquem and *C. vesiculosa* Chapman in outline and ornament.

Distribution: Known so far only from type locality, Turkey.

Explanation of Plate 3, 144

Fig. 1, LV int. lat., pit [representing presumed mandibular fulcrum](**IO 5762**); fig. 2, LV int. lat. (**IO 5762**); fig. 3, RV int. lat. (holotype, **IO 5761**).
Scale A (50 μm; ×651), fig. 1; scale B (250 μm; ×93), figs. 2, 3.


1a
2a
1b
2b
A
B


1a
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